OBSTETRICS & GYNAECLOGY
Questions&Answers

Q-1

A 53 year old woman has complaints of vaginal dryness, hot flashes and night sweats for the past 6 months. Her last menstrual period was more than a year ago. She currently takes an ACE inhibitor as part of her management for her blood pressure. What is the SINGLE most appropriate management for her symptoms?

A. **Raloxifene**
B. **Hormone replacement therapy**
C. **Progesterone only pill**
D. **Topical oestrogen**
E. **Clonidine**

ANSWER:
Hormone replacement therapy

EXPLANATION:
Hormone replacement therapy like oestrogen and progestogen patches are indicatedhere as she is having menopausal symptoms. This systemic treatment can also alleviatesymptoms of vaginal dryness.

A vaginal oestrogen cream or pessary would be appropriate if the patient only hadsymptoms of vaginal dryness without the other symptoms of menopause like hotflushes. In such cases, there is no need for a systemic treatment as topical treatment can alleviate symptoms.

Current evidence suggests that, the use of HRT is nto associated with an increase in blood pressure and therefore HRT is not contraindicated in women with hypertension as long as the blood pressure can be controlled by antihypertensive medication. It is good practice to monitor the patient's blood pressure 2 to 3 times in the first 6 months and then 6 monthly.

Hormone replacement therapy (HRT) indications
Hormone replacement therapy (HRT) involves the use of a small dose of oestrogen,combined with a progestogen (in women with a uterus), to help alleviate menopausalsymptoms.

Current indications for the use of HRT are:

- Vasomotor symptoms such as flushing, including sleep, mood disturbance and headaches
- For women with early menopause. They should be treated with HRT until the age of natural menopause (around 51 years). The most important reason for HRT in this group is preventing the development of osteoporosis
- For those women under 60 years who are at risk of an osteoporotic fracture in whom non-oestrogen treatments are unsuitable

It is especially important to note that other indications such as reversal of vaginal atrophy should be treated with topical oestrogens.

Q-2

A 22 year old woman who was diagnosed with a missed miscarriage a week ago now presents to the hospital because of abdominal pain. She says she passed a small fetus and a number of clots this morning. On examination, abdomen is tender, and cervical os is opened. A transvaginal ultrasound scan shows products of conception still present in the uterus. What is the single most likely diagnosis?

A. **Threatened miscarriage**
B. **Inevitable miscarriage**
C. **Incomplete miscarriage**
D. **Complete miscarriage**
E. **Spontaneous miscarriage**

ANSWER:
Incomplete miscarriage

EXPLANATION:
Products of conception still present in the uterus defines incomplete miscarriage.Some products of conception have been expelled but some still remain thus giving thediagnosis of incomplete miscarriage. There is usually pain and vaginal bleeding and thecervical os is open.

A short summary of types of miscarriages that are commonly asked in PLAB

Threatened miscarriage → Vaginal bleeding + fetal heart seen. Cervical os is closed

Missed miscarriage (delayed miscarriage) → Dead fetus before 20 weeks without thesymptoms of expulsion. May or may not have vaginal bleeding. Cervical os is closed.

Inevitable miscarriage → Cervical os opened and bleeding

Incomplete miscarriage - Not all products of conception have been expelled

Complete miscarriage - Everything has been expelled

Q-3

A 35 year old woman had a spontaneous vaginal delivery 10 days ago. She delivered a healthy baby girl and is currently breastfeeding. There were no complications throughout labour and the midwife has documented that the placenta appears complete. She now presents with irregular dark red vaginal bleeding over the past 2 days. Her blood pressure is 130/75 mmHg, pulse rate is 85 beats/minute and respiratory rate is 18 breaths/minute. She has a temperature of 37.4 C. What is the SINGLE next most appropriate action?

A. Crossmatch 2 units of packed red cells
B. Cervical smear
C. Pelvic ultrasound
D. High vaginal swab
E. Reassure, no action required

ANSWER:
High vaginal swab

EXPLANATION:
Secondary PPH is characterised by an abnormal or excessive bleeding from the birth canal between 24 horus and 12 weeks postnatally. It is most commonly caused by endometritis.

Investigations should include

- High vaginal swab
- Bloods including FBC and CRP
- Consider a transvaginal ultrasound to assess for retained products if no improvement

Co-amoxiclav is the first-line antibiotic for endometritis. It is safe in breastfeeding.

Q-4

A 33 year old woman complains of waking in the middle of the night to rush to the toilet. Most of the time, she does not make it to the toilet in time and she wets herself. What is the SINGLE most likely diagnosis?

A. Stress incontinence
B. Urge incontinence
C. Mixed incontinence
D. Overflow incontinence
E. Urethrovaginal fistula

ANSWER:
Urge incontinence

EXPLANATION:
This is the common presentation of urge incontinence. See below for the description ofthe types of urinary incontinence:

Urge incontinence / overactive bladder (OAB) → is due to detrusor over activity.Common complaint is “when I have to go to the toilet, I really have to go” or “I have thedesire to pass urine and sometimes urine leaks before I have time to get to the toilet”

Stress incontinence → leaking small amounts of urine when coughing or laughing.Usually with a history of many vaginal deliveries as this would weaken the pelvic floormuscles.

Mixed incontinence → a mix of both urge and stress incontinence

Overflow incontinence → involuntary release of urine from an overfull urinarybladder, often in the absence of any urge to urinate. Occurs in people who have ablockage of the bladder outlet (benign prostatic hyperplasia, prostate cancer, ornarrowing of the urethra), or when the muscle that expels urine from the bladder istoo weak to empty the bladder normally.

Urethrovaginal fistula → Opening between vagina and urethra. Common complaint is“ there is continual leakage of urine from my vagina” or “my vagina has a foul smell”.

MANAGEMENT OF URINARY INCONTINENCE
The management of incontinence depends on whether urge or stress urinary incontinence is predominant.

For stress incontinence:
1. Pelvic floor exercise is the initial treatment of choice. NICE recommends that at least eight contractions are performed three times a day for a minimum of three months.
2. Surgical procedures e.g., retropubic mid-urethral tape procedures may be required.
3. Duloxetine is used for those who are not surgical candidates.

For urge incontinence
1. Bladder retraining (minimum of six weeks). The idea is to gradually increase the intervals between voiding
2. Bladder stabilising drugs: antimuscarinic agents are first-line. NICE recommends oxybutynin, tolterodine or darifenacin. Immediate release oxybutynin should, however, be avoided in frail older women.

Q-5

A 16 year old clinically obese girl has not started her menstrual periods yet. She has severe acne and facial hair growth. Among her investigations, a high level of insulin was found. What is the SINGLE most likely diagnosis?

A. Cushing’s syndrome
B. Graves’ disease
C. Acquired hypothyroidism
D. Polycystic ovary syndrome
E. Addison’s disease

ANSWER:
Polycystic ovary syndrome

EXPLANATION:
Polycystic ovary syndrome (PCOS) would fit the best among the answers. Cushing's would be a consideration here as it can sometimes cause amenorrhoea too.

FSH LH OESTRADIOL PROLACTIN TABLE

	FSH	LH	Oestradiol	Prolactin
Polycystic ovarian syndrome (PCOS)	Normal	Increased Note: LH:FSH more than 2	Normal to mildly increased	Normal to mildly increased
Premature ovarian insufficiency (POI	Increased Diagnostic criteria: An elevated FSH level > 25 IU/l on two occasions > 4 weeks apart	Increased	Decreased	
Prolactinoma	Decreased	Decreased	Decreased	Extremely increased (> 5000 mU/L)
Absent uterus	Normal	Normal	Normal	Normal
Anorexia nervosa	Decreased to normal		Decreased	Normal
Sheehan's syndrome	Decreased	Decreased	Decreased	Decreased
Congenital adrenal hyperplasia (non-classic)	Normal	Normal	Normal to increased	Normal

Polycystic ovary syndrome
Slowly progressive symptoms, hirsutism, acne, oligomenorrhoea or amenorrhoea, weight gain, reduced fertility

- Serum FSH: Normal
- Serum Oestradiol: Normal to mildly increased
- Serum AMH: Increased
- Serum TSH: Normal
- Serum Prolactin: Normal to mildly increased
- Serum Dehydroepiandrosterone (DHEAS): Increased
- Total Serum Testosterone: Increased
- Pelvic Ultrasound: Polycystic ovaries

Premature ovarian insufficiency (Premature ovarian failure)
Menopausal symptoms and elevated gonadotropin levels before the age of 40 years

- Serum FSH: Increased → Diagnostic criteria: An elevated FSH level > 25 IU/l on two occasions > 4 weeks apart
- Serum LH: Increased
- Serum oestradiol: Decreased

Prolactinoma
Galactorrhoea, amenorrhoea or oligomenorrhoea, headache or visual disturbances → Bitemporal heminanopsia

- MRI brain: Pituitary tumour
- Serum prolactin: Extremely increased (> 5000 mU/L) is highly suggestive of prolactinoma
- Serum FSH: Decreased
- Serum LH: Decreased
- Serum Oestradiol: Decreased

Anorexia nervosa
Low BMI, pathological desire for thinness, normal secondary sexual characteristics, normal external and internal genitalia

- Serum FSH: Decreased to normal
- Serum oestradiol: Decreased
- Serum AMH: Decreased to normal
- Serum TSH: Normal
- Serum Prolactin: Normal
- Pelvic Ultrasound: Thin endometrial stripe

Sheehan's syndrome
Severe obstetric haemorrhage, hypotension, and shock with postnatal panhypopituitarism caused by necrosis of pituitary gland. Nausea, vomiting, lethargy, failure to breastfeed (agalactorrhoea), postural hypotension. Late features: Hypothyroidism features, adrenal crisis (with skin depigmentation)

- Serum FSH: Decreased
- Serum Oestradiol: Decreased
- Serum TSH: Decreased
- Serum T4: Decreased
- Serum Prolactin: Decreased
- Serum Growh hormone: Decreased
- Serum ACTH: Decreased
- Serum Sodium: Decreased
- Serum Cortisol: Decreased
- MRI Brain: Sella empty or filled with CSF, pituitary gland may be small

Congenital adrenal hyperplasia (non-classic)
Presents with hyperandrogenism in late childhood to early adult life. Obesity, hirsutism, acne, weight gain, history of premature pubarche, oligomenorrhoea or amenorrhoea, infertility

- Serum 17-hydroxyprogesterone (17-OHP) fasting levels > 200 nanograms/dL (> 6.06 nanomol/L)
- Total Serum Testosterone: Increased
- Serum DHEAS: Increased
- Serum FSH: Normal
- Serum LH: Normal

- Serum TSH: Normal
- Serum Prolactin: Normal
- Serum Oestradiol: Normal to increased

POLYCYSTIC OVARIAN SYNDROME (PCOS)
Polycystic ovary syndrome (PCOS) is a complex endocrine disorder with clinical featuresthat include hirsutism and acne (due to excess androgens), oligomenorrhoea oramenorrhoea, and multiple cysts in the ovary.

Symptoms:
- Oligomenorrhoea or amenorrhoea
- Hirsutism
- Alopecia
- Obesity
- Acne
- Subfertility

Diagnosis → Rotterdam consensus criteria
Two out of three of the following criteria being diagnostic of the condition:
1. Ultrasound → polycystic ovaries (either 12 or more follicles or increased ovarian volume
2. oligo-ovulation or anovulation
3. clinical and/or biochemical signs of hyperandrogenism

Around 20% of women have the appearance suggestive of polycystic ovaries on ultrasound but unless they fulfill the criteria of PCOS, they should not be treated

Biochemical abnormalities
- Hyperadrenogenism → Biochemical hyperadrogenism is considered an elevated free androgen index (FAI) of more than 5
- Hyperinsulinemia
- Increase in serum LH

General management
• Weight loss

Management for menstrual irregularities
• Weight loss
• Combined oral contraceptive pills, cyclical progestogen or levonorgestrel intrauterine system.

Management of infertility
• Weight loss → weight loss alone may achieve spontaneous ovulation
• Clomifene Citrate
• If clomifene citrate fails, add on metformin or gonadotrophins or Laparoscopicovarian drilling

Note regarding metformin:
- The RCOG published an opinion paper in 2008 and concluded that on current evidence metformin is not a first line treatment of choice in the management of PCOS

- Metformin is however still used, either combined with clomifene or alone, particularly in patients who are obese
- The rationale behind metformin use is that it improves insulin sensitivity and reduces hyperinsulinaemia
- Metformin is not currently licensed for PCOS

Q-6

A 35 year old lady presents with urinary incontinence 4 months after having a normal vaginal delivery of her second child. She says that she urinates a little every time she sneezes or coughs. On a speculum examintion, there are no anatomical abnormalities. What is the SINGLE most approprite next step in management?

A. Tension-free vaginal tape operation
B. Bladder drill (retraining)
C. Ring pessary
D. Duloxetine
E. Pelvic floor exercise

ANSWER:
Pelvic floor exercise

EXPLANATION:
This lady is suffering from stress incontinence as evident by small amounts of urineleakage when she sneezes or coughs. The best management would be pelvic floorexercises.

Tension-free vaginal tape operation should only be considered after trying conservative methods for treatment of stress incontinence.

Bladder drill (retraining) is a method used for detrusor instability and nto stress incontinence.

Ring pessary is of no use here as there is no cystocele.

Loss of weight, and reducing caffeine are other lifestyle modifications that could beeffective but were not given in this questions.

Q-7

A 27 year old woman presents to the emergency department in a presenting complaint of lower abdominal pain. The pain started suddenly earlier in the day. She is sexually active and does not use barrier methods. She has abdominal tenderness, temperature of 39.0 C, heart rate of 102 bpm, and a blood pressure of 130/85 mmHg. There is no vaginal discharge seen on speculum examination. What is the SINGLE most appropriate next course of action to make the diagnosis?

A. High vaginal swab
B. Endocervical swab
C. Pelvic ultrasound
D. Abdominal X-ray
E. Emergency laparoscopy

ANSWER:
Pelvic ultrasound

EXPLANATION:
Tubo-ovarian abscess is an advanced complication of acute salpingitis, known clinically as pelvic inflammatory disease. Ultrasonography should be done in very ill patients in whom tubo-ovarian abscess is suspected. A high vaginal swab or endocervical swab can take days to return with results. As this is an A&E case, an ultrasound would be more appropriate as this would lead to a diagnosis.

Q-8

A 33 year old woman has just had an uncomplicated normal vaginal delivery. The third stage of labour was managed actively and the placenta and membranes were expelled completely soon after delivery of the baby however she continues to bleed vaginally. She has now total estimated blood loss of 1 litre. Her uterus is relaxed and is felt to be boggy and above the umbilicus. What is the SINGLE most appropriate immediate step to manage this patient?

A. **Uterine massage**
B. **Cross match 4 units of blood**
C. **Explore the uterus for retained placental tissue under general anaesthesia**
D. **Speculum examination for genital tract tears**
E. **Another bolus of 5 units oxytocin**

ANSWER:
Uterine massage

EXPLANATION:
Causes for PPH may be considered to relate to one or more of 'the four Ts':

- Tone (abnormalities of uterine conception)
- Tissue (retained products of conception)
- Trauma (of the genital tract)
- Thrombin (abnormalities of coagulation)

The most common cause of primary PPH is uterine atony and in this case since the uterus is felt to be above the uterus and relaxed, a uterine massage would be the most appropriate next step.

Q-9

A 33 year old woman who is rhesus negative had just delivered vaginally 3 hours ago. She would like to know when is the best time for anti-D immunoglobulins to be administered. What is the recommended time to administer anti-D immunoglobulins to a previously non-sensitised rhesus negative mother after delivery?

A. **As soon as possible and always within 24 hours**
B. **Anytime in the time frame of 48 hours**
C. **As soon as possible and always within 72 hours**
D. **Up to 10 days**
E. **After 24 hours**

ANSWER:
As soon as possible and always within 72 hours

EXPLANATION:
Following potentially sensitising events which include giving birth, anti-D immunoglobulins should be administered as soon as possible and always within 72 hours of the sensitising event. If exceptionally this deadline has not been met and 72 hours have passed, you can still administer anti-D immunoglobulins up to 10 days as there may still be some protection offered during this time.

RHESUS NEGATIVE PREGNANCY
A basic understanding of the pathophysiology is essential to understand Rhesusnegative pregnancies.

If a Rh -ve mother delivers a Rh +ve child a leak of fetal red blood cells may occur which causes anti-D IgG antibodies to form in mother. In future pregnancies these antibodiescan cross placenta and cause haemolysis in fetus.

Prevention of Rh sensitization
• Test for anti-D antibodies in all Rh -ve mothers at booking
• If Rh –ve and not previously sensitised, NICE (2008) advise giving anti-D at 28 and 34 weeks gestation
• anti-D is for prophylaxis only–Remember once sensitization has occurred it is irreversible and Anti-D administration would be pointless

Anti-rhesus (anti-D) immunoglobulin are given intramuscularly. It neutralises any Rhesus D positive antigens which have entered mother's blood. If the antigens have been neutralized, there will be no reason for mother to develop an immunity and produce antibodies. She would remain non-sensitised.

Anti-D immunoglobulin should be given as soon as possible (but always within 72hours) in the following situations:
• delivery of a Rh +ve infant, whether live or stillborn
• any termination of pregnancy or evacuation of retained products of conception (ERPC) after miscarriage
• miscarriage if gestation is > 12 weeks
• ectopic pregnancy
• blunt abdominal trauma
• external cephalic version
• antepartum haemorrhage, any vaginal bleeding over 12 weeks gestation
• amniocentesis, chorionic villus sampling, fetal blood sampling

Affected fetus
- If unborn
  - Oedematous (hydrops fetalis, as liver devoted to RBC production thus albumin falls)
  - Foetal heart failure
  - Treatment involves intrauterine blood transfusion
- If born
  - Jaundice (due to build up of excessive bilirubin from RBC breakdown)
  - Anaemia

- Hepatosplenomegaly
- Treatment involvesUV phototherapy, blood transfusion, exchange transfusion

Q-10

A 45 year old lady comes to the family planning clinic for contraception advice. She has two young children and does not want anymore children. An incidental finding of multiple small submucosal fibroids was found recently on an ultrasound scan. She is asymptomatic and her medical history is otherwise insignificant. What is SINGLE most appropriate contraceptive for this lady?

A. Etonogestrel
B. Combined oral contraceptive pill (COCP)
C. Progestogen-only pill (POP)
D. Intrauterine system (IUS)
E. Intrauterine Contraceptive Device (IUCD)

ANSWER:
Intrauterine system (IUS)

EXPLANATION:
Combined hormonal contraception (CHC): despite the 'pill' previously being considereda risk factor for fibroid growth, CHC is helpful if the patient requires contraception,although it is not as effective as a levonorgestrel-releasing intrauterine system. Thus,intrauterine system would be the answer here.

Intrauterine system (IUS) reduces the uterine size in women with fibroids.

If this lady here had presented with asymptomatic fibroids and was not looking forcontraception, expectant management would be a valid answer especially if she wasperi-menopausal.

CONTRACEPTION CLINCHERS
Choosing the correct contraceptive for the correct situation is something a lot of doctors have problems with. Here are some useful contraception/abnormal uterine bleeding clinchers for the exam.

Young woman, not sexually active (don't require contraception)
- Menorrhagia only – Tranexamic acid
- Menorrhagia with dysmenorrhoea – Mefenamic acid
- Menorrhagia/dysmenorrhoea/metrorrhagia (irregular menses) - COCP

Sexually active woman (require contraception)
- Menorrhagia/dysmenorrhoea or those suffering from fibroids (which do not distort the uterine cavity) – IUS Mirena (first-line). These questions will also mention possible contraindications for COCP like obesity/smoking/history of thromboembolism etc.
  Note: If women are younger than 20 years old, IUS Mirena is not first line as it is considered to be UKMEC 2, thus if no contraindications, COCP, POP or implant may be more suitable as they would be UKMEC 1.
- Women with sickle cell disease and menorrhagia – Depo-provera IM

Emergency contraception

- Within 72 hours of unprotected sex – Levonelle pill
- Within 120 hours of unprotected sex – IUCD or ellaOne pill

FIBROID MANAGEMENT

If asymptomatic

- Follow up annually to monitor size and growth unless rapid growth or reason to suspect pelvic malignancy in which case further investigations are warranted

With menorrhagia

- Levonorgestrel-releasing intrauterine system (LNG-IUS) – provided uterine fibroid is not distorting uterine cavity
- Tranexamic acid, NSAIDs or COCP
- Norethisterone as a temporary measure

With severe menorrhagia and fibroid more than 3 cm

- Ulipristal acetate up to 4 courses
  - Each course is up to 3 months
  - Usually used in pre-operative treatment

Surgical management

- Hysterectomy – The most successful treatment
- Myomectomy
- Uterine artery embolization
- Endometrial ablation – only for fibroids less than 3 cm in diameter

Both myomectomy and uterine artery embolization can be performed in patients who would like to preserve their fertility with myomectomy usually being the preferred option in these cases especially if treatment of infertility is required. Myomectomy has been shown to increase pregnancy rates compared with uterine artery embolization.

Other medical managements

- Gonadotropin-releasing hormone (GnRH) agonists
  - Reduces the size of fibroids and are used prior to surgery to reduce perioperative blood loss
  - Surgery must take place as uterine fibroids would return to pretreatment size if GnRH agonist treatment is stopped

Q-11

A 40 year old woman attends the Gynaecology outpatient clinic for painful periods. The pain is worse on the first day of her menstrual cycles and continues for 5 days. She has regular 28 day cycles. She also suffers from menorrhagia. She has had a laparoscopic tubal sterilisation in the past. She takes ibuprofen and paracetamol for pain relief during the first few days of pelvic pain. She is currently sexually active with her stable partner of 10 years. She has no bowel or urinary symptoms. Endometriosis is suspected. What is the SINGLE most appropriate action?

A. **Prescribe regular codeine**
B. **Prescribe a trial of combined oral contraceptive pill**
C. **Request a pelvic magnetic resonance imaging**
D. **Prescribe antibiotics**
E. **Arrange a diagnostic laparoscopy**

ANSWER:
Prescribe a trial of combined oral contraceptive pill

EXPLANATION:
The key to answer this is knowing when a diagnostic laparoscopy is required for endometriosis. In practice, we would offer a trial of hormonal treatment for a period of 3 to 6 months before having a diagnostic laparoscopy. This is due to the risk of laparoscopic surgery with the additional fact that even with a laparoscopic ablation of endometrial tissue the relapse of symptoms occurs in 40 to 45% of women with up to 30% of women being readmitted for surgery within 5 years.

ENDOMETRIOSIS
Endometriosis is the presence of endometrial-like tissue outside the uterine cavity. It isoestrogen dependent, and therefore mostly affects women during their reproductiveyears. If the ectopic endometrial tissue is within the myometrium itself it is calledadenomyosis.

Up to 10-12% of women have a degree of endometriosis

Clinical features
• Chronic pelvic pain (cyclic or constant)
• Dysmenorrhoea - pain often starts days before bleeding
• Deep dyspareunia (indicates possible involvement of uterosacral ligaments)
• Subfertility

Investigation
• Laparoscopy is the gold-standard investigation
• Transvaginal ultrasound scanning appears to be a useful test, both to make andto exclude the diagnosis of an ovarian endometrioma

Management
• NSAIDs to treat pain
• Combined oral contraceptive pill (other hormonal drugs can be used too)
• Levonorgestrel intrauterine system

Note: Drug therapy unfortunately does not seem to have a significant impact onfertility rates

Surgery
Laparoscopic excision and ablation of endometrioid lesions helps reduceendometriosis-associated pain. Laparoscopic excision and ablation ofendometriotic ovarian cysts may improve fertility.

Q-12

A 27 year old woman has pelvic pain, dysmenorrhoea and increasingly heavy periods over the last 12 months. She also complains of dyspareunia. There is generalized pelvic tenderness without peritonism. A pelvic ultrasound was requested and was reported with no evidence of adenomyosis or ovarian endometrioma. What is the SINGLE most likely diagnosis?

A. **Endometriosis**
B. **Uterine fibroid**
C. **Pelvic congestion syndrome**
D. **Endometrial hyperplasia**
E. **Fibromyalgia**

ANSWER:
Endometriosis

EXPLANATION:
There are actually two possibilities here. Endometriosis and pelvic congestion syndrome. Given that endometriosis is much more common than pelvic congestion syndrome, endometriosis is the answer.

A take home point here is a normal ultrasound pelvis does not exclude endometriosis.

Endometriosis presents exactly the way they describe in this question with chronic pelvic pain, dysmenorrhoea and dyspareunia. Pelvic ultrasound scans are usually normal.

In pelvic venous congestion there are dilated veins believed to cause a cyclical dragging pain. It is worse premenstrually and after prolonged periods of standing and walking. Dyspareunia is also often present.

Given there is no history of standing here, pick endometriosis. It is also by far more a common diagnosis when it comes to chronic pelvic pain.

Q-13

A 36 year old woman is planning to undergo a laparoscopic tubal sterilisation. What is the risk of pregnancy after sterilisation by tubal ligation?

A. **1:50**
B. **1:200**
C. **1:500**
D. **1:1000**
E. **1:5000**

ANSWER:
1:200

EXPLANATION:
Laparoscopic tubal occlusion
Laparoscopic tubal occlusion using Filshie clips to mechanically occlude the fallopian tubes is now the laparoscopic method of choice. The risk of pregnancy after

sterilisation by tubal ligation is about 1:200, meaning that 1 in every 200 women who undergo sterilisation may get pregnant at some point after sterilisation.

Q-14

A 22 year old woman was prescribed doxycycline for 10 days to treat Lyme disease. She has been using combined oral contraceptive pills regularly for the past 6 months. What is the SINGLE most appropriate advice?

A. **Combined oral contraceptive pills can be used with no additional contraceptive method necessary**
B. **Continue taking combined oral contraceptive pills plus an additional barrier method for 2 days**
C. **Continue taking combined oral contraceptive pills plus an additional barrier method for 10 days**
D. **Stop combined oral contraceptive pill for a week and use barrier methods**
E. **Prescribe doxycycline for 15 days**

ANSWER:
Combined oral contraceptive pills can be used with no additional contraceptive method necessary

EXPLANATION:
No action needed. Latest recommendations are that no additional contraceptive precautions are required when combined oral contraceptives are used with antibacterials that do not induce liver enzymes, unless diarrhoea or vomiting occur.

ORAL CONTRACEPTION INTERACTION AND HEPATIC ENZYME INDUCERS
Hepatic enzyme inducers can decrese the effectiveness of the combined oral contraceptive pill and progesterone only pill when taken at normal doses. The two most commonly askd oral contraception interactions with hepatic enzyme inducers are:

1. Rifampicin
2. Anticonvulsants (such as phenytoin, carbamazepine, phenobarbitone)

Women starting enzyme-inducing drugs should be advised to use a reliable contraceptive method which is unaffected by enzyme inducers.

In general, depo-provera, copper intrauterine devices or the levonorgestrel containing intrauterine system (LNG-IUS) are the safest to use.

Once stopping hepatic enzyme inducers, women are still advised to continue appropriate contraceptive measures for another 4 to 8 weeks as enzyme activity does not return to normal until several weeks of stopping hepatic inducers.

A disrespectful but good mnemonic to remember for enzyme inducers is: ***CRAP GPs.*** *Whilst majority of GPs are absolutely fantastic, if a GP prescribes rifampicin and combined oral contraceptive pill without informing the woman of contraception failure, he may be called a Crap GP. A good GP would discuss the use of additional barrier methods, having progesterone only injections, insertion of intrauterine devices or use of increasing dose of oestrogen.*

Carbamazepine
Rifampicin
Alcohol – chronic consumption
Phenytoin

Griseofulvin
Phenobarbitone
Sulfonylureas

Q-15

A 24 year old woman with multiple sexual partners complains of non-cyclical intermittent lower abdominal pain, deep dyspareunia and menstrual irregularities that has been ongoing for 18 months. On vaginal examination, cervical excitation was noted and she is tender on both adnexae. She has no significant past medical history. Which is the SINGLE most likely cause of her symptoms?

A. **Pelvic inflammatory disease (PID)**
B. **Endometriosis**
C. **Fitz-Hugh-Curtis syndrome**
D. **Cervicitis**
E. **Asherman syndrome**

ANSWER:
Pelvic inflammatory disease (PID)

EXPLANATION:
Multiple sexual partners are a risk factor for pelvic inflammatory disease. Women ofher age group (<25 years old) are of greater risk for pelvic inflammatory disease as theyare more sexually active during this period.

Other options are less likely because:

Endometriosis → Although chronic pelvic pain, deep dyspareunia and menstrualirregularities could be seen in endometriosis. It is unlikely the given choice here as thehistory of multiple sexual partners and cervical excitation do not match with thisanswer. This pain is non cyclical which also suggests PID rather than endometriosis.

Fitz-Hugh-Curtis syndrome → is a complication of pelvic inflammatory disease (PID).Usually presents with an acute onset of right upper quadrant (RUQ) abdominal painaggravated by breathing, or coughing. This pain may be referred to the right shoulder

Cervicitis → Presents with discharge. Do not get confused between cervicitis and PID.Infection at the cervix can eventually ascend to cause PID. But if the infection is purelyat the cervix, they will not present with menstrual irregularities and lower abdominalpain as the infection has not ascended to involve the uterus, fallopian tubes, andovaries.

Asherman syndrome → are adhesions of the endometrium often associated withdilation and curettage of the intrauterine cavity. It results in infertility. Often,

theyexperience menstrual irregularities. But in this question there is no relevant pastmedical history meaning she did not have any dilation and curettage thus this option isvery unlikely.

PELVIC INFLAMMATORY DISEASE (PID)
Pelvic inflammatory disease (PID) is a term used to describe infection and inflammationof the female pelvic organs including the uterus, fallopian tubes, ovaries and thesurrounding peritoneum. Most commonly caused by ascending infection from theendocervix.

Causative organisms
• Chlamydia trachomatis - the most common cause
• Neisseria gonorrhoeae

Risk factors for PID
• Age <25
• Previous STIs
• New sexual partner/multiple sexual partners
• Uterine instrumentation such as surgical termination of pregnancy
• Intrauterine contraceptive devices
• Post-partum endometritis

Features
• lower abdominal pain
• fever
• deep dyspareunia
• dysuria and menstrual irregularities may occur
• vaginal or cervical discharge
• cervical excitation
• Abnormal vaginal bleeding (intermenstrual, postcoital)

Investigation
• screen for Chlamydia and Gonorrhoea

Management
There are many combinations of antibiotics to treat PID. It is unlikely that thePLAB test would ask you the management of PID. PLAB questions may ask youfor the management of cervicitis (but unlikely PID). Remember, cervicitis is notthe same as PID.

This is one of the combination examples for treatment of PID:
Outpatients: Ceftriaxone 500 mg as a single intramuscular dose, followed by oraldoxycycline 100 mg twice daily plus oral metronidazole 400 mg twice daily, both for 14days.

Note the differences between acute PID and just cervicitis.
If just cervicitis (Chlamydia)
• Azithromycin 1g single dose (OR doxycycline 100mg bd for 7 days) (both havesimilar efficacy of more than 95%)

If just cervicitis (Neisseria gonorrhoeae)

• Azithromycin 1g PO and ceftriaxone 500mg IM

RCOG guidelines suggest that in mild cases of PID intrauterine contraceptivedevices may be left in. The more recent BASHH guidelines suggest that theevidence is limited but that ' Removal of the IUD should be considered andmay be associated with better short term clinical outcomes'

Complications
• infertility - the risk may be as high as 10-20% after a single episode
• chronic pelvic pain
• ectopic pregnancy

Q-16

A 34 year old female presents with a very strong foul smelling vaginal discharge. What organism(s) could cause such a symptom?

A. **Chlamydia, Gonorrhoea**
B. **Chlamydia, Gardnerella**
C. **Chlamydia, Gonorrhoea, Gardnerella**
D. **Gonorrhoea, Gardnerella**
E. **Gardnerella only**

ANSWER:
Gardnerella only

EXPLANATION:
Bacterial vaginosis and Trichomonas vaginalis can give foul smelling discharge.

In bacterial vaginosis the vaginal discharge is grey-white and has a “fishy” smell.

In trichomonas vaginalis, it can be a greenish and frothy along with vulvovaginitis i.e. strawberry cervix.

The discharge of Chlamydia and Gonorrhea is not usually foul smelling.

Since Trichomoniasis is not present among the available choices, Gardnerella is theanswer.

Bacterial vaginosis
Bacterial vaginosis (BV) is caused by an overgrowth of mixed anaerobes,such as Gardnerella vaginalis, which replace the usually dominant vaginal lactobacilli resultingin a raised vaginal pH.

It is the commonest cause of abnormal vaginal discharge in women of childbearing age.

Whilst BV is not a sexually transmitted infection it is seen almost exclusively in sexuallyactive women.

Features
- Vaginal discharge: 'fishy', offensive
  The characteristic ‘fishy’ smell is due to the presence of amines released by bacterial proteolysis and is often the reason women attend the clinic

- Asymptomatic in 50%

Amsel's criteria for diagnosis of BV → 3 out of 4 required for diagnosis:
• Homogenous grey-white discharge
• Characteristic fishy smell
• 'Clue cells' present on microscopy
• Vaginal pH > 5.5

Management
May resolve spontaneously and if successfully treated has a high recurrence rate.However, most women prefer it to be treated.
• Metronidazole 400mg orally bd for 5 days or metronidazole 2g (single dose) OR
• Clindamycin 2% cream vaginally at night for 7 days

Q-17

A 64 year old woman has been treated for breast cancer with tamoxifen. What SINGLE medication should be added to her regime?

A. **Bisphosphonates**
B. **Calcium**
C. **Vitamin D**
D. **Calcitonin**
E. **Phosphate binders**

ANSWER:
Bisphosphonates

EXPLANATION:
There is actually no guideline tht says any of the above medication should be started as an adjuvant to her regime. Howver, given the choices provided, bisphosphonates is probably the best choice as it is shown in some studies to reduce the risk of bone metastasis in breast cancers.

Q-18

A 34 year old woman who is 26 weeks pregnat attends her general practice with complaint of constipation. She has already tried conservative managements like increased water intake and is on high fibre foods. She is also active and exercises 3 times a week. What is the SINGLE most appropriate medication to administer?

A. **Sodium picosulfate**
B. **Lactulose**
C. **Glycerin suppositories**
D. **Phosphate enema**
E. **Senna**

ANSWER:
Lactulose

EXPLANATION:
Constipation can be improved by increasing fluid intake, eating high fibre foods and exercise, all of which this patient has already done. When conservative managements have been attempted and are unsuccessful, laxatives should be tried.

Lactulose, which is not known to be harmful in pregnancy is usually used as first line for pregnant women as it is a very well tolerated medication. Senna which is a stimulant laxative is also very effective however they do cause more abdominal discomfort compared to bulk-forming laxatives like lactulose. If senna is used, it should only be used for short periods.

Q-19

A 32 year old woman presents to the clinic with a 11 week history of amenorrhoea. A home pregnancy test done that morning was shown to be positive. Today, she is complaining of painless vaginal bleeding. She has excessive morning sickness for the past 2 weeks. She has had two previous normal vaginal deliveries. Routine examination of the patient's abdomen reveals a gravid uterus which extends to slightly past the umbilicus. The fundal height measures around 16 cm. On speculum examination, the cervical os is seen as closed. What is the SINGLE most likely diagnosis?

A. **Incorrect last menstrual period date**
B. **Threatened miscarriage**
C. **Uterine fibroids**
D. **Hyperemesis gravidarum**
E. **Molar pregnancy**

ANSWER:
Molar pregnancy

EXPLANATION:
Not all questions are straightforward in exams. You will come across some where you would feel information is missing like this one. The options of incorrect dates and molar pregnancy come close.

It is important to that that the question states the uterus extends up to 16 weeks gestation. It can therefore be inferred that the pregnancy is either large for dates with a uterine fibroid or molar pregnancy alernatively an incorrect menstrual period date is also a possibility.

If this patient had uterine fibroids, it would NOT explain the excessive morning sickness.

If this patient had an incorrect menstrual period date and was actually 16 weeks gestation, it would NOT explain the reason hyperemesis started so late in pregnancy. Symptoms of hyperemesis would have occurred several weeks ago as hyperemesis symptoms begin 6 to 8 weeks and peaks at 12 weeks.

The patient is presenting with features of molar pregnancy which are uterus large for dates, first trimester bleeding, and hyperemesis. This is a presentation that is also similar to multiple pregnancies like twin pregnancy as they are also at increased risk of bleeding, hyperemesis and have a uterus that is larger for dates. However, in multiple pregnancies the urterus is seen to be larger in the second trimester rather than the first. Also, multiple pregnancies is not an option given here.

Hyperemesis gravidarum is not completely incorrect as this patient also has a diagnosis of hyperemesis gravidarum as she is seen to be vomiting for the past two weeks. However, the most likely diagnosis given the whole clinical picture is still molar pregnancy.

Gestational Trophoblastic Disease
Gestational trophoblastic disease (GTD) covers a spectrum of diseases caused byovergrowth of the placenta. It ranges from molar pregnancies to malignant conditionssuch as choriocarcinoma. If there is any evidence of persistence of GTD the condition isreferred to as gestational trophoblastic neoplasia (GTN).

GTD is classified as follows:
Premalignant - hydatidiform mole
• Complete hydatidiform mole (CHM)
• Partial hydatidiform mole (PHM)

Malignant - gestational trophoblastic neoplasia (GTN)
• Invasive mole
• Choriocarcinoma
• Placental site trophoblastic tumour (PSTT)
• Epithelioid trophoblastic tumour (ETT)

The classification of GTD is less in important. An exam of this level usually does not require you to know details of types of GTD.

Features:
• Hyperemesis
  - Due to excessive amounts of human chorionic gonatotropin (hCG)
• Irregular first-trimester vaginal bleeding
• Uterus large for dates
• Vaginal passage of vesicles containing products of conception
• Serum hCG is excessively high with complete moles, but levels may be withinthe normal range for partial moles.

Ultrasound findings of a complete mole
• 'Snowstorm' appearance of mixed echogenicity, representing hydropic villi and intrauterine haemorrhage
• Large theca lutein cysts

Management of Hydatidiform mole:
• Surgical evacuation (Suction curettage)
  - Note that histological examination of products of conception isessential to confirm diagnosis
• Two-weekly serum and urine samples until hCG concentrations are normal.
  - Women should be advised not to conceive until hCG level has beennormal for 6 months
  - Barrier contraception should be used until serum hCG is normal (oral contraception may also be used after molar evactuation, before hCG returns to normal)

Management of gestational trophoblastic neoplasia (GTN)

This is unlikely to be asked in detail in PLAB 1 due to the complexity of themanagement. But you do need to know it involves chemotherapy. If chemotherapy is started, women should wait a year from completion of their treatment before trying to conceive.

Q-20

A pregnant woman with long term history of osteoarthritis comes to the antenatal clinic with complaints of restricted joint movement and severe pain in her affected joints. What is the SINGLE most appropriate management?

- **A. Paracetamol**
- **B. Steroids**
- **C. NSAID**
- **D. Paracetamol and dihydrocodeine**
- **E. Pethidine**

ANSWER:
Paracetamol

EXPLANATION:
It is important to remember that as junior doctors, you should never prescribe any painrelief other than paracetamol to a pregnant women. Paracetamol has a good safetyprofile with pregnant women when compared to all the other analgesics. There arecases where stronger pain relief is needed, but usually consultants would be involvedin the management.

For the purpose of PLAB part 1, whenever you see a pregnant lady with any sort of pain(whether it is from osteoarthritis, back pain, headaches, or a sprained ankle), nevergive any analgesia except for paracetamol.

Q-21

A 50 year old lady presents with complaints of urinary incontinence which occurs daily. She says that she urinates a little everytime she laughs or coughs. She has had 2 previous vaginal deliveries. She has been avoiding going out and has reduced her outdoor activities due to her urinary incontinence. On physical examination, the patient is found to have vaginal atrophy and a well supported uterus. A urinalysis was done and the results were found to be insignificant. What is the SINGLE most appropriate initial step in her management?

- **A. Vaginal pessary**
- **B. Topical oestrogen**
- **C. Oxybutynin**
- **D. Truss**
- **E. Pelvic floor exercise**

ANSWER:
Pelvic floor exercise

EXPLANATION:
This is a typical case of stress incontinence. To understand it further, first we need to

understand what urinary incontinence is. Incontinence is the involuntary leakage of urine.

Stress incontinence is a leak of small amounts of urine when coughing or laughing. This is due to an increase in intra-abdominal pressure. Usually with a history of many vaginal deliveries as this would weaken the pelvic floor muscles. The next management here would be pelvic floor exercises. Loss of weight and reducing caffeine are other lifestyle modifications that could be effective but were not given in this question.

Q-22

A 24 year old lady presents 4to the Early Pregnancy Unit with vaginal spotting and mild left-sided abdominal pain. Her last menstrual period was 8 weeks ago. A pregnancy test done in the GP clinic was positive. She has a transvaginal ultrasound scan, which is reported as 'inconclusive'. Serum human chorionic gonadotropin (hCG) is 1400 IU/litre. What is the SINGE most likely diagnosis?

(A serum hCG above 24 IU/litre is considered positive for pregnancy)

A. **Fibroids**
B. **Ectopic pregnancy**
C. **Complete miscarriage**
D. **Threatened miscarriage**
E. **Incomplete miscarriage**

ANSWER:
Ectopic pregnancy

EXPLANATION:
The diagnosis here is ectopic pregnancy. The first clue here is the gestational age → 8weeks. Ectopic pregnancies would usually present around 6-8 weeks from start of lastperiod as it is then that they are large enough to stretch the fallopian tubes thuscausing pain. The stretching of the fallopian tubes is also the reason why they maysometimes experience cervical motion tenderness on a vaginal examination.

The second clue here is the unilateral abdominal pain. This gives us a clue that thepathology is towards one side rather than in the middle.

The remaining choices are far less likely to be the correct answer
Fibroids → In the past, fibroids could be the cause of an inconclusive scan as they mayobstruct the view of the gestational sac. However, with the modern transvaginal scanthis is no longer the case. And thus ectopic pregnancies are a more likely diagnosishere.

Complete miscarriage - Is when all products of conception has been expelled. This isunlikely the case as she has only suffered a mild vaginal bleeding (vaginal spotting).

Threatened miscarriage → Presents with vaginal bleeding + fetal heart is seen. Adiagnosis of threatened miscarriage cannot be made without seeing a viable fetus onan ultrasound scan.

Incomplete miscarriage → Not all products of conception have been expelled. Thismeans that products of conception would still be visible on an ultrasound scan.

ECTOPIC PREGNANCY
Defined by the implantation of a fertilized ovum outside the uterus

Clinical features
• lower abdominal pain: typically the first symptom.
• vaginal bleeding: usually less than a normal period
• history of recent amenorrhoea: typically 6-8 weeks from start of last period
• peritoneal bleeding can cause shoulder tip pain

Any woman at a childbearing age who attends A&E with abdominal pain MUST have a urine pregnancy test performed. Ruptured ectopic pregnancies are life-threatening. Do not miss a diagnosis of an ectopic by forgetting to do a urine pregnancy test.

Examination findings
• abdominal tenderness
• cervical excitation (also known as cervical motion tenderness)
• adnexal mass may be noticed – *rarely seen*

Always observe the blood pressure of the patient as a significant drop of blood pressure in a suspected ectopic needs to be quickly escalated

Management:
- If haemodynamically stable → Laparoscopic salpingectomy or salpingostomy
- If haemodynamically unstable → Laparotomy (open salpingectomy or salpingostomy)

Methotrexate would be first line for an ectopic pregnancy if the patient was not in significant pain however it can only be used if it contains all the criteria below
- Not in significant pain
- Haemodynamically stable
- Adnexal mass smaller than 35 mm with no fetal heart visible
- No intrauterine pregnancy
- Serum hCG less than 5000 IU/litre *(ideally less than 1500 IU/litre)*
- Able to return for follow-up

It is unlikely that the examiners for the exam expct you to know these criteria thus methotrexate is unlikely to be the answer in exam

Q-23

A 31 year old woman who is currently 39 weeks gestation attends the antenatal day unit feeling very unwell with sudden onset of epigastric pain associated with nausea and vomiting. She has a temperature of 36.7 C and her blood pressure is 155/100 mmHg. Her liver enzymes are raised and her other blood results are as follows:

Haemoglobin 82 g/L
White cell count 5 x 10^9/L
Platelets 90 x 10^9/L

What is the SINGLE most likely diagnosis?

A. **Acute fatty liver of pregnancy**
B. **Acute pyelonephritis**
C. **Cholecystitis**
D. **HELLP syndrome**
E. **Acute hepatitis**

ANSWER:
HELLP syndrome

EXPLANATION:
HELLP syndrome
This is a serious complication regarded by most as a variant of severe pre-eclampsiawhich manifests with haemolysis (H), elevated liver enzymes (EL), and low platelets(LP).

Liver enzymes usually increase and platelets decrease before haemolysis occurs.

The syndrome is usually self-limiting, but permanent liver or renal damage may occur.

Note that eclampsia may co-exist.

Signs and Symptoms:
• Epigastric or RUQ pain and tenderness
• Nausea and vomiting
• Urine is 'tea-coloured' due to haemolysis.
• Increased BP and other features of pre-eclamsia

Management
• Delivery
• Supportive and as for eclampsia (magnesium sulfate ($MgSO_4$) is indicated)
• Although platelet levels may be very low, platelet infusions are only required if bleeding, or for surgery and <40

DIFFERENTIATING AFLP FROM HELLP
Acute fatty liver of pregnancy vs Haemolysis, Elevated Liver enzymes, Low Platelets syndrome.

It is unlikely that you would need to know all the different features of HELLP and AFLP for the level fo the PLAB exam as even senior medical and obstectric teams often have difficulty telling them apart in a clinical setting, however this table is inserted for those who would like to understand how to differentiate them for your own clinical knowledge.

	HELLP	**AFLP**
Epigastric pain	++	+
Vomiting		++
Hypertension	++	+
Proteinuria	++	+
ALT/AST	+	++
Hypoglycaemia		++

	HELLP	AFLP
Hyperuricaemia	+	++
DIC	+	++
Thrombocytopenia	++	+
WBC	+	++
Ammonia		++
Acidosis		++
Haemolysis	++	

Q-24

A 20 year old primiparous woman, 32 weeks gestation, presents to the maternity assessment unit with a history of painless vaginal bleeding after intercourse. She is not booked at your current hospital, but came to the closest hospital for assessment. She states that there have been no problems during her pregnancy and that she has been seeing her midwife in the community. On examination, a soft and relaxed uterus is noteed with a fundal height of 32 cm. CTG is normal. She has a pulse of 112 beats/minute, a blood pressure of 94/60 mmHg and a respiratory rate of 26 breaths/minute. What is the SINGLE most likely diagnosis?

A. Placental abruption
B. Placenta accreta
C. Placenta praevia
D. Preterm labor
E. Vasa praevia

ANSWER:
Placenta praevia

EXPLANATION:
Painless vaginal bleeding without abdominal pain should raise suspicion of placenta praevia.

In the UK, it is common to have an ultrasound scan during the first trimester and again around 20 weeks for an anomaly scan which the sonongrapher would formally report the position of the placenta. In this stem, she did not have previous scans and so she may very well have a low lying placenta.

The painless bleeding seen in placenta praevia may occur without warning or after intercourse. This is one reason obstetricians advise women with placenta praevia not to have intercourse.

From her observations, one can see that it is maternal blood that is being lost which is consistent with placenta praevia. If this was the case of vasa praevia, it would be foetal blood that would be lost and maternal observations would remain normal.

Placental abruption presents with sudden onset abdominal pain +/- vaginal bleeding. It is also commonly associated with CTG abnormalities.

Placenta accreta is less common than placenta praevia and are seen commonly in the presence of a uterine scar which alows the placenta to attach to the myometrium

PLACENTA PRAEVIA
Placenta praevia describes a placenta lying wholly or partly in the lower uterinesegment.This is common early in the pregnancy, but is most often not associated with bleeding.

The key clinical feature is painless bleeding after 24 weeks of gestation.

Risk factors
• previous placenta praevia
• multiple pregnancies

Clinical features
• Painless vaginal bleed
• uterus not tender
• lie and presentation may be abnormal
• fetal heart usually normal

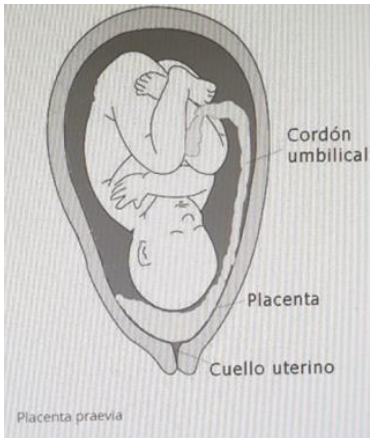
The painless late-pregnancy bleeding may occur during rest or activity, suddenlyand without warning. It may be preceded by trauma, coitus, or pelvic examination. A digital vaginal examination should not be performed. However, a speculum or a transvaginal probe can safely be used in placenta praevia.

Diagnosis
This is based on the presence of painless late-trimester vaginal bleeding with anobstetric ultrasound showing placental implantation over the lower uterine segment.

A transvaginal ultrasound is preferred over abdominal ultrasound for detection ofplacenta praevia.

In the UK, most low-lying placentas are detected at the routine anomaly scans (around 20 weeks gestation). This is done transabdominally. If the placenta extends over the internal cervical os, they are offered another transabdominal scan at 32 weeks. If the position of the placenta is still unclear using a transabdominal scan, a transvaginal scan is offered.

Around 5% will have low-lying placenta when scanned at 16-20 weeks gestation however the incidence at delivery is only 0.5%, therefore most placentas rise away from cervix during the second and third trimester.



Q-25

A 35 year old woman presented with the complaint of lower abdominal pain to the gynaecology outpatient clinic. She had been experiencing mild abdominal pain since the insertion of an intrauterine contraceptive device (IUCD) two months ago. Her last menstrual period was seven days ago. On speculum examination, the IUCD strings were not visualized. The patient says that she is in a long term sexual relationship with her boyfriend of three years. The patient was subsequently referred fro a transvaginal ultrasound whereupon the IUCD was not found in the uterus. What is the SINGLE most appropriate next step in this case?

A. X-ray of the abdomen
B. Hysteroscopy
C. Laparoscopy
D. Emergency contraception
E. Reassure that the IUD has fallen out

ANSWER:
X-ray of the abdomen

EXPLANATION:
To answer this question accurately, it is essential to know about the management of lost intrauterine device threads.

How do we manage lost intrauterine device threads?

1. Exclude pregnancy by performing a urine pregnancy test
2. Request a pelvic ultrasound to look for the IUCD
3. If the IUCD is not found on ultrasound, request an abdominal X-ray

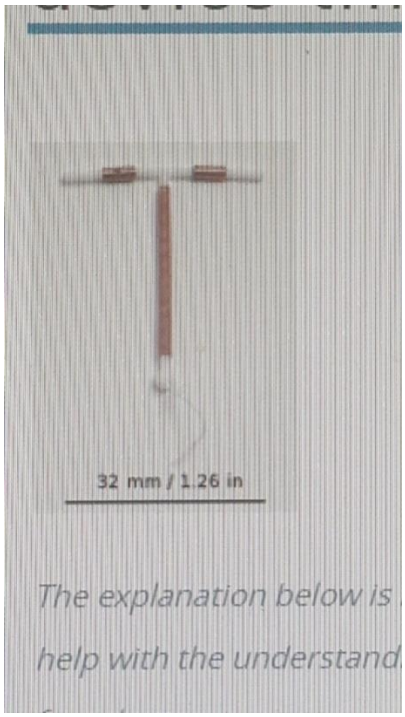
Emergency contraceptin is incorrect as there is no evidence of recent sexual intercourse in the stem. Remember, one needs to know the timing of sexual intercourse to know which emergency contraception to use. Example, levonorgestrel can be used for up to 72 hours whereas ulipristal acetate and copper intrauterine device can be used up to 5 days.

We are not sure if the coil is in place. There is no evidence of sexual intercourse.

A hysteroscopy may be used to remove an IUCD from within the uterine cavity provided it is proven to be there.

An X-ray of the abdomen would be best to determine if the IUCD is in the abdomen. This can occur when the IUCD perforates through the uterus during insertion or finds a way to migrate to the abdominal cavity when initially inserted intrauterine. If the IUCD is found outside the uterus but inside the abdominal cavity, a laparoscopy can be done to retrieve it.

MANAGEMENT OF LOST INTRAUTERINE DEVICE THREADS



The explanation below is rather specific and most likely not required for PLAB but they do help with the understanding of what do you do in situations where the IUD thread is not found.

Speculum examination reveals no IUD thread

- Take menstrual and sexual history, exclude pregnancy. Provide alternative contraception and/or post coital contraception if indicated by history
- If woman is pregnant
  - Refer to Early Pregnancy Unit for rapid access to ultrasound scan. Viabilty of pregnancy, site, gestation will need to be determined. *The management from here on is rather complex and unlikely to be asked in the PLAB test*
- If woman is not pregnant
  - Refer for ultrasound scan. Ensure contraception is given until ultrasound scan is performed.
    - If ultrasound scan reports misplaced in cavity, the management depends on symptoms and degree of displacement.
    - If ultrasound scan reports device is correctly located in the uterus, leave the IUD in situ until it is due to be removed.
    - If IUD not seen in uterus, order a plain abdominal X-ray
      - If abdo X-ray shows IUD is in the abdominal cavity, this may require laparoscopic removal
      - If abdo X-ray shwos IUD not located, this implies that IUD has fallen out and replacement of IUD can be offered.

Q-26

A 26 year old woman presents with a "fishy" vaginal discharge. On examination, a homogeneous grey-white vaginal discharge is seen. Vaginal pH is 5.8. What is the SINGLE most appropriate management?

A. **Metronidazole**
B. **Azithromycin**
C. **Doxycycline**
D. **Ceftriaxone**
E. **Flucloxacillin**

ANSWER:
Metronidazole

EXPLANATION:
Please see Q-16

Q-27

A 36 year old female goes to her local GP clinic with the complaint of heavy menstrual bleeding. She also complains of pain in her lower abdominal area during her menstrual periods. She describes the pain as being intermittent in nature with a cramping quality. The pain sometimes radiates to her lower back. She takes standard over-the-counter paracetamol for the pain but she says that they provide only minimal relief. She has a standard 28 day menstrual cycle and describes her menstrual period as being regular in duration and onset, but extremely heavy in nature. She has had three children, and she claims that their births were all by elective caesarean section and that they were uncomplicated in nature. A urine pregnancy test comes up negative. Her past medical history is significant for her being diagnosed with a deep vein thrombosis five years ago. The patient was put on oral warfarin for three months after her diagnosis of a deep vein thrombosis. Now, she has no other medical problems and takes no chronic medications. A transvaginal ultrasound was done for the patient. The ultrasound revealed multiple small sized fibroids measuring about 2 cm x 2 cm in diameter. The fibroids do not distort the uterine cavity. What is the SINGLE best contraceptive method to offer this patient?

A. **Combined oral contraceptive pill**
B. **Intrauterine contraceptive device (T-Safe ®)**
C. **Progesterone only contraceptive pill**
D. **Levonorgestrel-releasing intrauterine system (Mirena ®)**
E. **Progestogen-only subdermal implant (Nexplanon ®)**

ANSWER:
Levonorgestrel-releasing intrauterine system (Mirena ®)

EXPLANATION:
In this scenario, this patient is in need of a contraceptive method that will solve her excessive menstrual bleeding and which will cater to her specific needs. The levonorgestrel-releasing intrauterine system (Mirena ®) is the best option for this patient.

The levonorgestrel-releasing intrauterine system (Mirena ®) is the best option for this patient to treat her heavy menstrual periods and to relieve her dysmenorrhoea. It has been shown to reduce the severity of dysmenorrhoea even though it doesn't affect or regulate the release of the femael hormones which govern ovulation.

According to NICE guidelines, if a uterine fibroid is less than 3 cm by 3 cm in size and is not distorting the uterine cavity, medical treatments which can be considered are the intrauterine system, transexamic acid and the combined oral contraceptive pill. We cannot offer the combined oral contraceptive pill in this patient as COCP's are contraindicated in patients with a history of venous thromboembolism.

In the exam, if no contraindications exist for choosing the levonorgestrel-releasing intrauterine system, then choose that as an answer. It is the first-line contraceptive method in the United Kingdom.

Q-28

A 31 year old primigravida at 24 weeks' gestation was admitted 24 hours ago to the maternity unit because of preterm rupture of membranes (PROM). She is starting to have abdominal pains and uterine contractions. She has a pulse rate of 122 beats/minute and a temperature of 36.8 C. Routine examination of the patient's abdomen reveals tenderness suprapubically. A speculum examination reveals a foul-smelling discharge originating from the cervix with the cervix slightly opened. What is the SINGLE most likely diagnosis?

A. Placental abruption
B. Chorioamnionitis
C. Bacterial vaginosis
D. Endometritis
E. Threatened miscarriage

ANSWER:
Chorioamnionitis

EXPLANATION:
Maternal tachycardia, tenderness suprapubically and purulent vaginal dischargewith history of ruptured membranes points towards chorioamnionitis. PROM is a major risk factor for ascending infections causing chorioamnionitis. Maternal tachycardia often precedes pyrexia hence the normal temperature given in this stem.

There is no indication of miscarriage here which is characterised by vaginal blood loss.

CHORIOAMNIONITIS
Chorioamnionitis is an acute inflammation of the foetal amnion and chorionmembranes, typically due to an ascending bacterial infection from vagina into uterus in the setting ofmembrane rupture in pregnancy.

Features suggestive of chorioamnionitis
• Fever
• Abdominal pain, including contractions
• Maternal pyrexia and tachycardia (tachycardia .
• Uterine tenderness.
• Fetal tachycardia
• Foul odor of amniotic fluid
• Speculum: offensive vaginal discharge → yellow/brown

Risk factors
• Prolonged labour
• Internal monitoring of labour
• Multiple vaginal exams
• Meconium-stained amniotic fluid

Q-29

A 33 year old woman presents to the GP surgery with a positive pregnancy test and concerns about this pregnancy. She has had 3 early miscarriages in the past with no live births. Based on her last menstrual period, she is now 6 weeks gestation. She was investigated for antiphospholid syndrome in the past and her lupus anticoagulant antibodies were found to be positive. Her BMI is 22 kg/m^2 and she is a non-smoker. What is the SINGLE most appropriate management?

A. Cervical cerclage
B. Bed rest until delivery
C. Prophylactic vaginal progesterone
D. Low molecular weight heparin and aspirin
E. Reassure, no change of management

ANSWER:
Low molecular weight heparin and aspirin

EXPLANATION:
She has been diagnosed with antiphospholipid syndrome in the past. This puts her at risk for blood clots and she would eventually need heparin. Heparin and aspirin also reduces the risk of miscarriages in patients with diagnosed antiphospholipid syndrome.

NICE guidelines (2015) gives clear recommendations for use of prophylactic cerclage and prophylactic vaginal progesterone. They should be offered to women if she has a history of spontaneous preterm birth or mid-trimester loss between 16 weeks and 34 weeks of gestation AND in whom a transvaginal ultrasound scan has been carried out between 16 to 24 weeks of pregnancy that reveals a cervical length of less than 25 mm. Prophylactic cervical cerclage can also be considered in women with cervical length less than 25 mm who have a history of cervical trauma like a LLETZ procedure. This patient had 3 early miscarriages and thus there is no indication for a cervical cerclage or progesterone pessaries.

CERVICAL CERCLAGE
Cervical weakness is a recognised cause of second-trimester miscarriage. The diagnosisis essentially a clinical one and based on a history of second-trimestermiscarriage preceded by spontaneous rupture of membranes or painlesscervical dilatation.

Cervical cerclage does come with risks which are related to the surgery. Risks include infections and rupture of the membranes.

The criteria is a strict and complicated one thus it is unlikely to bea correct answer during PLAB part 1. Nonetheless, if they do give a history of painlessdilatation during the previous miscarriages, cervical cerclage could be the option.

ANTIPHOSPHOLIPID SYNDROME

Antiphospholipid syndrome is the most important treatable cause of recurrentmiscarriage. Antiphospholipid syndrome refers to the association betweenantiphospholipid antibodies (lupus anticoagulant, anticardiolipin antibodies and anti-B2 glycoprotein-I antibodies) and adverse pregnancy outcome or vascular thrombosis.

All women with recurrent first-trimester miscarriage and all women with one or moresecond-trimester miscarriage should be screened before pregnancy forantiphospholipid antibodies. Note the term recurrent miscarriage refers to loss of three or more consecutive pregnancies.

If diagnosed with antiphospholipid syndrome, pregnant women can be treated with aspirin 75 mg plus heparin as this is seen to lower the risk of further miscarriage.

Corticosteroids have no role in improving live birth rate of women with recurrent miscarriage associated with antiphospholipid antibodies.

Q-30

A 26 year old woman with regular menses and her 28 year old partner comes to the GP surgery complaining of primary infertility. She and her husband have been trying to achive pregnancy for more than 2 years and have been unsuccesful. She has a regular 28 day menstrual cycle. Her BMI is 23. What is the SINGLE most appropriate investigation to determine if she is ovulating?

A. **Basal body temperature charts**
B. **Cervical smear**
C. **Day 2 follicular stimulating hormone (FSH) and luteinizing hormone (LH)**
D. **Day 21 progresterone**
E. **Endometrial biopsy**

ANSWER:

Day 21 progesterone

EXPLANATION:

Day 21 progesterone which is the mid-luteal progesterone level is used to assessovulation. If this is low, it may need repeating, as ovulation does not occur everymonth.

FSH and LH should be measured if there is menstrual irregularity: High levels maysuggest poor ovarian function. A comparatively high LH level relative to FSH level canoccur in PCOS. In reality, we would obtain FSH, LH and mid-luteal progesterone levels.But for the purpose of examination, always pick mid-luteal progesterone levels as theanswer when it comes to infertility investigations.

Basal body temperature charts are not recommended to predict ovulation, as they areunreliable.

Female Infertility
Causes of female infertility
• Unexplained
• Ovulation failure
• Tubal damage
  • Note that a history of pelvic inflammatory disease is highly suggestiveof damage to tubes

Basic investigations
• Serum progesterone 7 days prior to expected next period. Meaning day 21 of a28 day cycle. However, this day will need to be adjusted for different lengths ofcycle
  • This is also termed “Mid-luteal progesterone level “
  • It is done to assess ovulation:
    • If low, it may need repeating, as ovulation does not occurevery month

Q-31

A 28 year old woman, gravida 2, para 1, comes to the maternity unit for evaluation for regular uterine contractions at 39 weeks’ gestation. Her previous delivery was an emergency cesarean section at 38 weeks for dystocia. She is now experiencing severe abdominal pain and profuse vaginal bleeding. Her heart rate is130 bpm, blood pressure is 95/55, oxygen saturation is 98% and temperature is 37.1 C. Reduced variability and late decelerations are now seen on CTG. What is the SINGLE most likely diagnosis?

A. **Endometritis**
B. **Urinary tract infection**
C. **Shoulder dystocia**
D. **Uterine rupture**
E. **Placenta praevia**

ANSWER:
Uterine rupture

EXPLANATION:
Uterine rupture
Definition
Uterine rupture is complete separation of the wall of the pregnant uterus with orwithout expulsion of the fetus that endangers the life of the mother or the fetus, orboth.

This usually occurs during labour but has been reported antenatally.

Signs and symptoms
• Tenderness over sites of previous uterine scars
• Fetal parts may be easily palpable
• Fetus not palpable on vaginal examination
• Vaginal bleeding may be evident
• Signs of maternal shock may be present.

CTG may show fetal distress and change in apparent uterine activity (contractions mayseem to disappear on the tocograph).

Risk Factors
The most common risk factors are:
• previous C-section or other uterine surgeries
• excessive oxytocin stimulation
• failure to recognize obstructed labour.

Women considering the options for birth after a previous caesarean should beinformed that planned VBAC carries a risk of uterine rupture of 22–74/10,000

Diagnosis
• Confirmation of the diagnosis is made by surgical exploration of the uterus and identifying the tear

Management
• Urgent laparotomy to deliver fetus and repair uterus

Q-32

A 42 year old overweight smoker complains of heavy periods. An ultrasound scan reveals a normal uterus. She would like a long term treatment with minimal side effects that would offer treatment for the menorrhagia and provide contraception although she is still unsure if she would like children in the future. What is the SINGLE most appropriate management?

A. Combined oral contraceptive pills
B. Endometrial ablation
C. Levonorgestrel intra-uterine system
D. Progestogen implant
E. Copper intrauterine contraceptive device

ANSWER:
Levonorgestrel intra-uterine system

EXPLANATION:
Among the options levonorgestrel intra-uterine system (Mirena coil) is the besttreatment to reduce menorrhagia. It is currently first-line treatment for menorrhagia inthe UK.

Combined oral contraceptive pills can do the job as well but she has already stated thatshe would want a long term treatment with minimal side effects. Thus levonorgestrelintra-uterine system would be the most appropriate.

Copper intrauterine contraceptive device and progestogen implants are more prone tohave irregular heavy bleedings compared to levonorgestrel intra-uterine system(Mirena coil).

Endometrial ablation does affect fertility and is not an appropriate management for awoman who may still want children in the future.

MENORRHAGIA MEDICAL MANAGEMENT
NICE have suggested that these medical management of heavy menstrual bleeding should be considered in the following order:

1. Levonorgestrel-releasing intrauterine system
2. Tranexamic acid or non-steroidal anti-inflammatory drugs (NSAIDs) or combined oral contraceptives
3. Norethisterone (15 mg) daily from days 5 to 26 of the menstrual cycle, or injected long-acting progestogens.

This should take into account if contraception is desired. If contraception is desired, then preference would go towards intrauterine system (Mirena) followed by COCP and injected long-acting progestogens.

Important combinations
- Combination of tranexamic acid and nonsteroidal anti-inflammatory drug (NSAID) can beused if patient has both menstrual bleeding and dysmenorrhoea
- Combination of NSAID and COCP can beused if dysmenorrhoea is problematic
- Do NOT combine tranexamic acid with a COCP or Mirena coil

For heavy menstrual bleeding that needs stopping rapidly:
- Oral norethisterone 5 mg three times daily for 10 days

In secondary care, treatment includes:
- Gonadotrophin-releasing hormone (GnRH) agonists

The management of menorrhagia and fibroids overlap considerably. So it is always wise to go through these two topics together.

Q-33

A 34 year old woman presents to the infertility clinic with her husband. They have been trying to conceive for 3 years but have not been succesful despite having regular intercourse. Her BMI is 31 kg/m^2. She has dark pigmentation on her neck and severe acne on her face. She also complains of thinning of her hair. She was sent for an ultrasound scan which showed multiple follicles on both her ovaries. What is the SINGLE most appropriate initial management to treat her infertility?

A. Weight loss
B. Clomifene Citrate
C. Laparoscopic ovarian drilling
D. Combined oral contraceptive pills
E. Spironolactone

ANSWER:
Weight loss

EXPLANATION:
The question here describes signs and symptoms of polycystic ovarian syndrome (PCOS). The scenario of acne on her face points towards an excess of androgens (hirsutism, alopecia, acne are all manifetations of hyperandrogenism). Not to mention that her initial complaint was infertility which is one of the diagnostic criterion for PCOS.

The dark pigmentation on her neck is called acanthosis nigricans which is characterised

by brown to black hyperpigmentation of the skin found in body folds, such as the axilla, nape of the neck, and groin. It is a marker of insulin resistance.

Weight loss is the most appropriate answer as part of the INITIAL management.

Clomifene citrate is an option together with weight loss however it is advisable to encourage weight loss first. In practice, we would advise patients to lose weight while getting blood test done to confirm anovulation.

There are some clinicians who wouldstart them on metformin right away on their first visit. This is a debatable action but since metformin was not given in the options, we shall not discuss it here. Just note that meformin is currently unlicensed for use in PCOS andso women would need to be counselled carefully before initiating therapy.

Laparoscopic drilling is a treatment for infertility for PCOS but isnot first line.

COCP is a treatment for PCOS to regulate their irregular periods but it is not for treatment of infertility.

Spironolactone (an antiandrogen) is used by endocrinologiests to help with the effects of hirsutism. But again, this will not help with infertility.

Q-34

A 17 year old girl with primary amenorrhoea complains of severe abdominal pain every 4 to 8 weeks which is now getting worse. On abdominal examination, a lower abdominal mass is felt. What is the SINGLE most likely diagnosis?

A. Ectopic pregnancy
B. Ovarian carcinoma
C. Haemotometra
D. Endometriosis
E. Adenomyosis

ANSWER:
Haematometra

EXPLANATION:
The key word here is primary amenorrhoea. This means that she has never had hermenses before. The only possibility among the options given that could cause primaryamenorrhoea is haematometra.

Primary amenorrhoea and cyclical pain indicate haematometra. Haematometra is anaccumulation of blood within the uterus.

One of the causes of haematometra that is associated with primary amenorrhoea is animperforate hymen or a transverse vaginal septum. In an imperforate hymen, onemight have a bluish bulging membrane visible at the introitus. A transverse vaginalseptum may present with a possible abdominal mass.

Q-35

A 34 year old lady comes to the GP for removal of an intrauterine device. On speculum examination, the cervix is visualised but the intrauterine device thread is not seen. Her last menstrual period is 2 weeks ago and she has been having regular sexual intercourses with her partner. She has a negative pregnancy test. What is the SINGLE most appropriate action?

A. **Transabdominal ultrasound**
B. **Transvaginal ultrasound**
C. **Abdominal X-ray**
D. **Combined oral contraceptive pill**
E. **Repeat speculum examination under general anaesthesia**

ANSWER:
Transvaginal ultrasound

EXPLANATION:
Transvaginal ultrasound is a good step to locate if the intrauterine device is stillintrauterine, displaced or fallen out. It is unlikely that it has perforated the uterus as ifso, the patient would be presenting with an acute abdomen. Transvaginal ultrasoundhas better image quality when looking at the uterus compared to a transabdominalultrasound. An X-ray is capable of seeing the intrauterine device as well but it isreserved for more acute presentations like suspected perforation or when the IUD isnot seen on a ultrasound scan.

Combined oral contraceptives are not completely wrong as if there was a delay inobtaining the ultrasound scan, it may be necessary to start the woman on a form ofcontraception until the ultrasound scan can be performed. The choice of your answer depends on how the question is phrased. If the last line of the question asks “what is the most appropriate NEXT step” or “what is the most appropriate IMMEDIATE action”, prescribing a form of contraception would be your best pick.

Q-36

A 30 year old woman with suspected pelvic inflammatory disease has worsening of her symptoms of lower abdominal pain despite being treated with oral metronidazole and ofloxacin for 14 days. She has a temperature of 38.6 C, heart rate of 85 bpm, and a blood pressure of 110/80 mmHg. Her blood tests show:

White cell count 18 x 10^9/L
CRP 160 mg/L

What is the SINGLE most appropriate next course of action?

A. **Endocervical swab**
B. **Pelvic ultrasound**
C. **Laparotomy**
D. **High vaginal swab**
E. **Urine culture**

ANSWER:
Pelvic ultrasound

EXPLANATION:
The possible diagnosis here is a pelvic abscess or tubo-ovarian abscess which arecomplications of PID. A high vaginal swab or endocervical swab can take days to returnwith results. As this is a A&E case, an ultrasound would be more appropriate as thiswould lead to a diagnosis.

Ultrasound scan is the diagnostic imaging method of choice for acute pelvic pain ingynaecology. It can easily diagnose sequelae of PID (including pyosalpinx andtuboovarianabscess).

Laparoscopy would be the next step after finding a mass on ultrasound.

Urine culture has no part in the diagnosis of pelvic abscess

Q-37

A 29 year old woman's recent cervical smear results show inflammatory changes without any dyskaryosis. She has no pelvic or vaginal pain. There was no discharge on examination. Speculum examination had shown a normal cervix and vaginal mucosa. What is the SINGLE most appropriate action?

A. **Repeat smear in 3 years**
B. **Repeat smear in 6 months**
C. **Repeat smear urgently**
D. **Perform an endocervical swab**
E. **Refer to colposcopy clinic**

ANSWER:
Repeat smear in 6 months

EXPLANATION:
The results that show inflammatory changes are nonspecific. These findings aredifficult to interpret. It may be non significant or it may also represent genitalinfections like candida amongst others. Inflammation is usually not a worrying signunless it is severe in which case we may consider a more serious sexually transmittedinfection.

It is good practice to repeat the smear in 6 months to ensure that the inflammation hasresolved.

Q-38

A 28 year old woman at 31 weeks gestation attends the antenatal clinic. Her full blood count was taken when she was 28 weeks which results show:

Haemoglobin 10.6 g/dL
Mean cell volume 96 fL
Mean cell haemoglobin concentration 350 g/L

What is the SINGLE most appropriate management?

A. **Offer folate supplements**
B. **Offer iron dextran**
C. **Offer ferrous sulphate**
D. **Explain that this is physiological haemodynamic anaemia**
E. **Offer vitamin B12 supplements**

ANSWER:
Explain that this is a physiological haemodynamic anaemia

EXPLANATION:
The values of anaemia differ in pregnancy as compared to a non pregnant women.

The British Committee for Standards in Haematology has defined anaemia inpregnancy as the following values
Hb levels of:
<11.0g/dl in the first trimester
<10.5 g/dl in the second and third trimesters
<10.0 g/dl in the postpartum period.

Since her Hb level is above 10.5g/dL, she does not need iron tablets.

This is one of the questions that differ in terms of how you answer in PLAB and howyou would act in real life. While the British Committee of Standards in Haematologyhave gave strict definitions of when to give iron tablets, in real life, many gynaecologistwould have prescribed iron tablets in this case. Again, it depends on hospitalguidelines. But for the PLAB test, it is important to follow national guidelines.

Q-39

A 23 year old woman is followed up for 6 weeks after a surgical procedure to evacuate the products of conception in the uterus following a miscarriage. The histology shows changes consistent with a hydatidiform mole. What is the SINGLE most appropriate investigation in this case?

A. **Abdominal ultrasound**
B. **Maternal karyotype**
C. **Paternal blood group**
D. **Serum B-hCG**
E. **Transvaginal US**

ANSWER:
Serum B-hCG

EXPLANATION:
Serum and urine samples of hCG concentrations are extremely important.

In hydatidiform mole, hCG levels are likely to be raised excessively (especially incomplete moles). Management would involve surgical evacuation, after which the hCGlevels are expected to return to a normal, non-pregnant level.

We would like the hCG to go down towards a normal level but If it plateaued or if hCGlevels rise after evacuation, chemotherapy is indicated.

This is the reason it is so important not to get pregnant during the time that hCG levelsare decreasing as if one were to get pregnant, hCG levels would increase again and wewill not know if it is due to the hydatidiform mole or the new pregnancy.

Q-40

A 33 year old lady who is now 28 weeks pregnant comes to the antenatal clinic with pain and swelling on her left calf muscle. On physical examination, she has distension of superficial veins and increased skin temperature at affected area. What is the SINGLE most appropriate treatment?

- **A. Aspirin**
- **B. Paracetamol**
- **C. Low molecular weight heparin**
- **D. Warfarin**
- **E. Alteplase**

ANSWER:
Low molecular weight heparin

EXPLANATION:
Any pregnant woman with symptoms and/or signs suggestive of venous thromboembolism should have objective testing performed expeditiously and treatment with low-molecular weight heparin (LMWH) given until the diagnosis is excluded by objective testing, unless treatment is strongly contraindicated.

Q-41

A 15 year old female presents to the abortion service requesting a surgical termination of pregnancy. She is 10 weeks of gestation and has hid the pregnancy thus far from her parents and her partner. Her parents, who accompany her, disapprove of her decision and wish for her to see the pregnancy to term and then give the baby up for adoption. A consult with the patient in private reveals that she understands all aspects and risks of a surgical termination of pregnancy. She is adamant that she wants to have a surgical termination of her pregnancy without involving her partner and all efforts to persuade her otherwise have failed. What is the SINGLE most appropriate conclusion?

- **A. A consent from the parents is required to proceed**
- **B. A consent from partner is required to proceed**
- **C. Involve the partner of the young girl**
- **D. Her consent is not valid as she is not Gillick competent**
- **E. Her consent is valid**

ANSWER:
Her consent is valid

EXPLANATION:
The GMC's guidance on termination of pregnancy in patients who are under 16 is clear.

In summary, female patients under the age of 16 do not need parental consent to request a termination of pregnancy using either medical or surgical methods if:

- The patient understands all aspects of the procedure
- The patient's physical or mental health is likely to suffer unless they receive a termination

The consent of a young patient with Gillick competence and full mental capacity overrides parental refusal.

A consent from the partner is not required. The decision to involve the partner is up to the patient as the partner has no legal right to be informed or consulted.

Q-42

A 28 year old female who is four weeks pregnant presents to the antenatal clinic for a check-up. She expresses a concern about ectopic pregnancies and wants to know the risk of her having an ectopic pregnancy. The patient claims that she read a NHS leaflet about ectopic pregnancies a few days ago and that it had gotten her worried that she might have an ectopic pregnancy. She is in a stable relationship with her boyfriend of three years and has no significant medical or surgical history. What is the SINGLE most likely risk factor for an ectopic pregnancy?

A. Pelvic inflammatory disease
B. Intrauterine contraceptive device
C. Fibroids
D. Endometriosis
E. Ovarian cyst

ANSWER:
Pelvic inflammatory disease

EXPLANATION:
According to NICE guidelines, one-third of women with ectopic pregnacies do have prior risk factors that predispose them of having an ectopic pregnancy. However, few risk factors are recognized only in around 25% of patients who are diagnosed with ectopic pregnancy. Pelvic inflammatory disease is the most common cause of ectopic pregnancy. It may cause complete obstruction of the fallopian tube or it can even delay the transport of the embryo so that implantation occurs in the tube.

Predisposing factors for an ectopic pregnancy include:
- Previous tubal pregnancy
- Previous induced abortion
- Pelvic inflammatory disease
- Previous ectopic pregnancy
- IUCD – (relative risk) conception rarely occurs with an intrauterine device in place but around half of such pregnancies conceived are thought to be ectopic in nature
- Tubal ligation

Q-43

A 32 year old female who has completed her family wants to know more about contraception and the risk of ectopic pregnancies. Which of the following contraceptive method increases the absolute risk of ectopic pregnancies?

A. **Combined oral contraceptive pills (COCP)**
B. **Intrauterine system (Mirena coil)**
C. **Progestogen-only pill (POP)**
D. **Progesterone-only implant (Nexplanon)**
E. **None of the above**

ANSWER:
None of the above

EXPLANATION:
This question by the examiners is written purely to test your knowledge of absoluteand relative risk. You would need to know a little on the background of intrauterinesystems.

The absolute risk of ectopic pregnancy with the mirena coil is decreased but therelative risk is increased. Meaning if you were to become pregnant while on the mirenacoil, the risk of it being an ectopic is higher as compared to if you were to becomepregnant while you were not on the mirena coil.

The risk of ectopic pregnancy when using IUDs is lower than when using nocontraception.

The overall risk of ectopic pregnancy when using the IUD is very low, at about 1 in 1000in 5 years.

If a woman becomes pregnant with the IUD in situ, the risk of ectopic pregnancy isabout 1 in 20.

Q-44

A 29 year old woman at 38 weeks of gestation presents with a 2 hours history of constant abdominal pain. While waiting to be seen, she passes 300 ml of blood per vagina. There has been reduced fetal movement since the episode of bleeding. What is the SINGLE most appropriate next step?

A. **Ultrasounds**
B. **Cardiotocography**
C. **Clotting screen**
D. **Group and save**
E. **Kleihauer Betke test**

ANSWER:
Cardiotocography

EXPLANATION:
With constant abdominal pain and PV bleeding, placental abruption is one of ourdifferentials. The first and most important step is to put on a cardiotocograph (CTG).

Ifthere is fetal distress seen on the CTG, the woman may be rushed for an emergency C-section.
As abruption is a clinical diagnosis, an ultrasound would have little value. A CTG isextremely important as a first step to monitor the fetus. Ultrasound would be a goodstep to perform to rule out placenta praevia if the CTG is found to be reassuring.

A group and save is also important as she is having PV bleeding, but the importance ofmonitoring fetus comes above having a group and save as most maternity units willhave O type blood stored in fridge.

Q-45

A 25 year old primigravida at 30 weeks' gestation comes to the maternity unit stating that 3 hours ago she had a gush of clear fluid from her vagina. She has no uterine contractions. She has a pulse rate of 110 beats/minute and a temperature of 38.4 C. Routine examination reveals a purulent yellow vaginal discharge with cervix slightly opened. Her blood tests show:

Haemoglobin 115 g/L
White cell count 21 x 10^9/L
Platelets 260 x 10^9/L
CRP 253

What is the SINGLE most likely diagnosis?

A. **Endometritis**
B. **Chorioamnionitis**
C. **Septic miscarriage**
D. **Pyelonephritis**
E. **Threatened miscarriage**

ANSWER:
Chorioamnionitis

EXPLANATION:
Fever, maternal tachycardia, tenderness suprapubically and purulent vaginal dischargewith history of ruptured membranes points towards chorioamnionitis. The blood tests also show an inflammatory response with a high CRP and high white cell count.

There is no indication of miscarriage here which is characterised by vaginal blood loss.

Although endometritis is a possibility, this is a more common complication in the postpartum period.

Q-46

A 27 year old presents to the Emergency Department with left sided abdominal pain and vaginal spotting. Her last menstrual period was 7 weeks ago. Her abdomen was tender to palpate and cervical motion tenderness was noticed on examination. Transvaginal ultrasound scan was perfomed which showed an empty uterus. Serum human chorionic gonadotrophin (hCG) is 4900 IU/litre. Her

observations include a blood pressure of 105/65 mmHg, heart rate of 80 beats/minute and respiratory rate of 18 breaths/minute. Her pain is not resolving despite morphine sulphate administered orally. What is the SINGLE most appropriate next course of action?

(A serum hCG above 25 IU/litre is considered positive for pregnancy)

A. **Immediate laparotomy**
B. **Laparoscopy**
C. **Repeat transvaginal scan in 24 hours**
D. **Computerised tomography of abdomen**
E. **Methotrexate**

ANSWER:
Laparoscopy

EXPLANATION:
It is clear here that she has an ectopic pregnancy.

As she is haemodynamically stable, a laparoscopic approach to the surgicalmanagement of tubal pregnancy is warranted.

Laparotomy would be the choice if the patient is clearly haemodynamically unstable.The reason for this is laparotomy is quicker than a laparoscopy.

Methotrexate would be first line for an ectopic pregnancy if she was not in significantpain.

Q-47

A 33 year old woman, gravida 2, para 1, comes to the maternity unit for evaluation for regular uterine contractions at 38 weeks' gestation. Her previous delivery was an emergency cesarean section at 39 weeks due to a breech fetus. She is now experiencing severe abdominal pain and tenderness over the previous uterine scars. CTG shows fetal distress and absent uterine contractility. What is the SINGLE most likely diagnosis?

A. **Endometritis**
B. **Placenta abruption**
C. **Uterine rupture**
D. **Shoulder dystocia**
E. **Placenta praevia**

ANSWER:
Uterine rupture

EXPLANATION:
Please see Q-31

Q-48

A 25 year old woman had a spontaneous vaginal delivery 4 weeks ago. She delivered a healthy baby. There were no complications throughout labour and in the postpartum period. She now presents with bleeding per vaginum. She describes them as like a period bleed. Her blood pressure is 120/70 mmHg. Her pulse rate is 70 beats/minute and respiratory rate is 15 breaths/minute. She has a temperature of 37 C. What is the SINGLE next most appropriate action?

A. **Send blood test for a group and save**
B. **Cervical smear**
C. **Reassure**
D. **Pelvic ultrasound**
E. **High vaginal swab**

ANSWER:
Reassure

EXPLANATION:
This is likely her menstrual cycles returning. Menstrual cyclescould return as early as 21 days postpartum in a woman who is not breastfeeding.

The fear here is missing a secondary postpartum haemorrhage associated with endometritis or placental tissue still remaining in the uterus. However, if there was an infection, the question writers would normally provide additional hints such as fever, offensive smelling lochia or feeling unwell. Some may argue that any woman preenting with a secondary PPH still requires a high vaginal and endocervical swab as this is in line with the RCOG guidelines 2016 Prevention and Management of Postpartum Haemorrhage. That being said, in an absolutely well patient like the above, it would be reasonable to just reassure.

There may also be retained pieces of the placenta after 4 weeks, however, with a small amount of bleed and normal observations, it is unlikely that any obstetrician would order a pelvic ultrasound. A pelvic ultrasound would be ordered if the patient was haemodynamically unstable or if therre were signs of an infection.

Q-49

A 29 year old woman stopped taking combined oral contraceptive pills 6 months ago and she has been amenorrhoeic since then. Ultrasonography reveals normal ovaries with no signs of developing follicles.

Her blood results show:

Follicle stimulating hormone (FSH) 8 IU/L
Luteinizing hormone (LH) 9 IU/L
Prolactin 44 ng/mL
Oestradiol 53 pmol/L

What is the SINGLE most likely cause?

A. **Hypothalamic amenorrhoea**
B. **Polycystic ovary syndrome**
C. **Prolactinoma**
D. **Post pill amenorrhoea**
E. **Premature ovarian failure**

ANSWER:
Post pill amenorrhoea

EXPLANATION:
POST PILL AMENORRHOEA
Post pill amenorrhoea occurs when stopping oral contraceptives does not lead to aresumption of a normal menstrual cycle. It is described as the loss of menstrual periodsfor at least 6 months after stopping birth control pills.

Post-pill amenorrhea is believed to be due to suppression of the pituitary gland by thebirth control pills.

Investigations
Investigation are usually needed if menstrual cycles do not resume after 3 months postpill. It may be that the cause of amenorrhoea started whilst taking the contraceptiveswhich induced an artificial cycle, masking the issue until they were stopped.
• Ultrasonography will reveal ovaries with no signs of developing follicles andovulation even after having stopped the pills for 6 months
• Blood tests showing a low level of FSH, LH and oestrogen is usually sufficient to confirm the diagnosis

Treatment
- The first line of treatment in case of post-pill amenorrhea is waiting for a spontaneous remission of the amenorrhea and a spontaneous occurrence of periods.
- The time limit is usually six months. But if the woman is anxious to get her periods, active treatment may be started after waiting for only three months. The standard treatment of post-pill amenorrhea is by stimulating the pituitary to produce FSH and LH. This is done by the drug clomiphene citrate.

AMENORRHOEA
Amenorrhoea is the absence of menstruation. Pathological amenorrhoea is the failure to menstruate for at least 6 months. Amenorrhoea can be divided into:
- Primary amenorrhoea – lack of menstruation before age 16 years or 14 in the absence of secondary characteristics
- Secondary amenorrhoea – cessation of menstrual cycles following established cycles.

Aetiology
- Hypothalamic amenorrhoea
  - Most common
  - Usually due to low BMI or excessive exercise
- Polycystic ovarian syndrome (PCOS)

- Hyperprolactinaemia
- Premature ovarian failure
  - Raised FSH levels
- Anatomical problems
  - Usually results in primary amenorrhoea
  - Vaginal examinations to rule out imperforate hymen is important
  - Pelvic ultrasound also useful to determine the pelvic anatomy (Mullerian agenesis)
  - Anatomical problems can also cause secondary amenorrhoea (Asherman's syndrome)
- Thyroid problems
  - Both hyperthyroidism and hypothyroidism can cause amenorrhoea

Don't forget pregnancy as a cause of amenorrhoea

Specific to look for in the stems

- Short stature – may indicate Turner syndrome
- Hirsutism, acne (androgen excess) – May indicated PCOS or hyperprolactinaemia
- Menopausal symptoms in women before age 40 – May indicate premature ovarian failure
- Eating disorder – May indicate anorexia nervosa
- Galactorrhoea – May indicate hyperprolactinaemia

Q-50

A 25 year old lady has had an uncomplicated pregnancy so far. She is now 39 weeks gestation. She was admitted because she had a show and has regular and painful uterine contractions. Her cervix is now 10 cm dilated and she has started pushing. What stage of labour is she in?

A. Frist stage
B. Second stage
C. Third stage
D. Fourth stage
E. Latent phase

ANSWER:
Second stage

EXPLANATION:
Labour may be divided into three stages

- stage 1: from the onset of true labour to when the cervix is fully dilated. It is divided into a latent and an active phase.
  Latent phase → begins with onset of regular contractions and ends with the acceleration of cervical dilation.
  Active phase → begins with cervical dilation acceleration, usually at 3-4 cm of dilation, ending with complete cervical dilation.
- stage 2: from full dilation to delivery of the fetus
- stage 3: from delivery of fetus to when the placenta and membranes have been completely delivered

Signs of labour include
• regular and painful uterine contractions
• a show (shedding of mucous plug)
• rupture of the membranes (not always)
• shortening and dilation of the cervix

Q-51

A 33 year old lady attends the obstetric assessment unit with a history of a positive pregnancy test and bleeding from her vagina for the last two days. Her last menstrual period is 8 weeks ago. On speculum examination, the cervical os is closed but blood is seen in the vault. What is the SINGLE most appropriate next step to determine the viability of the fetus?

A. **Transvaginal ultrasound**
B. **Serum B-hCG**
C. **Urinary B-hCG**
D. **Abdominal Ultrasound**
E. **Cardiotocography (CTG)**

ANSWER:
Transvaginal ultrasound

EXPLANATION:
A transvaginal ultrasound is most specific to identify the viability of the fetus.

Q-52

A 31 year old pregnant woman has her antenatal screening at her booking appointment for HIV and Hepatitis B status. What other routine investigations are ordered at booking?

A. **Rubella suceptibility and syphilis screen**
B. **Toxoplasma immunoglobulins and rubella susceptibility**
C. **Toxoplasma immunoglobulins and syphilis screen**
D. **Hepatitis C status**
E. **Measles susceptibility**

ANSWER:
Rubella susceptibility and syphilis screen

EXPLANATION:
The following are routine blood tests performed at booking
- Blood Group and antibodies
- Rhesus status
- Haemoglobinopathies
- Syphilis
- Hepatitis B status
- HIV
- Full blood count looking for anaemia
- Rubella susceptibility

Q-53

A 33 year old female presents with sudden severe colicky abdominal pain at her right iliac fossa. The pain is severe and has worsened intermittently over the last few hours. The pain radiates to her back and pelvis. She has also been vomiting and feeling nauseous since the pain started. A tender, mobile mass is felt at the right iliac fossa on examination. What is the SINGLE most likely diagnosis?

A. **Pelvic inflammatory disease**
B. **Appendicitis**
C. **Ovarian torsion**
D. **Constipation**
E. **Gastroenteritis**

ANSWER:
Ovarian torsion

EXPLANATION:
The likely diagnosis here is ovarian torsion. Although ovarian torsion cannot bediagnosed clinically as it is often diagnosed in theatre during a laparoscopy, thequestion writers want you to consider ovarian torsion as part of your differentialdiagnosis as it is one of the important gynaecologic emergencies. It is quite rare andonly accounts for about 3% of gynaecologic emergencies however it is important toconsider it especially given that this patient has a tender mobile mass at the right iliacfossa.

In clinical practice, appendicitis would also be part of your differential. If there was ahistory of an ovarian mass or if a ultrasound pelvis was done which found an ovarianmass, then the surgeons would refer her to to the gynaecology team to rule out anovarian torsion.

Ovarian torsion presents with sudden onset of sharp, unilateral lower abdominal painoften with nausea and vomiting.

In the reproductive years, regular growth of large corpus luteal cysts are a risk factorfor rotation. Basically, any enlargement of the ovary is a risk factor towards an ovariantorsion.

The definitive diagnosis is often made in the theatre as ovarian torsion is difficult todiagnose accurately and operation is often performed before the diagnosis is made.

Q-54

A 34 year old pregnant woman in her first trimester complains of a thick white vaginal discharge 3 days after starting antibiotics which was prescribed by her dentist for a dental abscess. What is the SINGLE most likely reason for her vaginal discharge?

A. **Candidiasis**
B. **Gardnerella**
C. **Neisseria**
D. **Chlamydia**
E. **Herpes simplex**

ANSWER:
Candidiasis

EXPLANATION:
Pregnant woman and recent use of antibiotics predisposes her to higher risk of developing vaginal candidiasis. It is likely that she was prescribed a broad spectrum antibiotic which has destroyed the normal flora leading to development of vaginal thrush.

It is well known that broad-spectrum antibiotics destroy healthy bacteria and disrupt the vagina's normal flora which can predispose women to develop either vaginal candidiasis due to the change of the natural balance of bacteria in the vagina.

Why pick candidiasis and not gardnerella?

While both may be good answers, candidiasis is more likely a better answer as broad-spectrum antibiotics that inhibit lactobacilli also inhibit Gardnerella which makes it less likely to trigger bacterial vaginosis.

Q-55

A 60 year old woman complains of bleeding after having intercourse. In the past month, she has had 3 episodes of mild vaginal bleeding. She had regular withdrawal bleeds until 8 years ago and has not had a bleeding since. Her last cervical smear was 3 years ago which showed no abnormalities. A speculum examination shows a normal cervix and vagina. What is the SINGLE most likely diagnosis?

A. **Cervical cancer**
B. **Endometrial cancer**
C. **Ovarian cancer**
D. **Sexually transmitted infection**
E. **Vaginal cancer**

ANSWER:
Endometrial cancer

EXPLANATION:
The idea here is to think of endometrial cancer. Any women who has postmenopausal bleeding should have a transvaginal ultrasound to determine the endometrial thickness. If the endometrium is thick, hysteroscopy with endometrial biopsy would be arranged.

A cervical smear is offered every 5 years in the UK if in the age group of 50 to 64 years old. Thus, having a cervical smear that was normal 3 years ago is a usual phenomenon. A repeat cervical smear is not necessary.

ENDOMETRIAL CANCER
Endometrial cancer is classically seen in post-menopausal women.
Classically,endometrial cancer presents as postmenopausal bleeding (PMB) and, although this is
not the only cause, it must be excluded.

Risk factors for endometrial cancer:
• Obesity
• Nulliparity
• Early menarche
• Late menopause
• Unopposed oestrogen. The addition of a progestogen to oestrogen reducesthis risk (e.g. In HRT). The BNF states that the additional risk is eliminated if aprogestogen is given continuously
• Diabetes mellitus
• Tamoxifen
• Polycystic ovarian syndrome

Features
In PLAB, they will always present with postmenopausal bleeding

Investigation
• First-line investigation is trans-vaginal ultrasound - a normal endometrialthickness (< 4 mm) has a high negative predictive value
• Hysteroscopy with endometrial biopsy gives the definitive diagnosis

Management
Is beyond the scope for PLAB. Remember, PLAB is an easy test.

Q-56

A 38 year old female attends the clinic because of issues of infertility. She also says that her last period was 9 months ago. Lab results show:

Follicle stimulating hormone (FSH) 59 U/L
Luteinizing hormone (LH) 78 IU/L
Prolactin 12 ng/mL
Oestradiol 25 pmol/L

An FSH was repeated 4 weeks later which was still elevated.

What is the SINGLE most likely diagnosis?

A. **Hypothalamic amenorrhoea**
B. **Polycystic ovarian syndrome**
C. **Prolactinoma**
D. **Hypothyroidism**
E. **Premature ovarian failure**

ANSWER:
Premature ovarian failure

EXPLANATION:
The diagnosis of premature ovarian failure usually needs two raised levels of FSH(more than 40 IU/L) taken at least four weeks apart. In this question, since she isamenorrheic with raised FSH and LH and a normal prolactin level, the most likelydiagnosis would be

premature ovarian failure. Women with premature ovarian failurealso have low estradiol (usually < 50 pmol/l).

PREMATURE OVARIAN FAILURE
Premature ovarian failure (Premature ovarian insufficiency) is defined as the onset ofmenopausal symptoms and elevated gonadotropin levels before the age of 40 years. Itoccurs in around 1 in 100 women.

Causes
• Idiopathic - the most common cause
• Chemotherapy (this can be temporary, as recovery of ovarian function canoccur, especially in younger women)
• Radiation
• Autoimmune disease
• Bilateral oophorectomy or surgical menopause

Presentation
1. The most common presentation is amenorrhoea or oligomenorrhoea (which may not necessarily be accompanied by hot flushes)
2. Infertility
3. Other features are similar to those of the normal climacteric symptoms:
   - Hot flashes
   - Night sweats
   - Irritability
   - Poor concentration
   - Decreased sex drive
   - Dyspareunia
   - Vaginal dryness

Tests:
FSH levels:
• FSH test should be undertaken in women aged under 40 years in whommenopause is suspected
• Two raised levels (more than 40 IU/L) taken at least four weeks apart arediagnostic

Serum follicle-stimulating hormone (FSH) measurement alone can be used to diagnosethe disease. The anterior pituitary secretes FSH and LH at high levels due to thedysfunction of the ovaries and consequent low estrogen levels.

Management:
• hormone replacement therapy (HRT) until at least the average age of themenopause (51 years)

(The average age of the menopause in women in the UK is 51 years)

Important Notes:
Do NOT use early menopause and premature ovarian failure interchangeably
• The term early menopause is used for those women who go through theirmenopause between 40-45 years

Do NOT use premature menopause and premature ovarian failure interchangeably

- Premature ovarian failure is sometimes referred to as premature menopause, but the two conditions aren't exactly the same. Women with premature ovarian failure may have irregular or occasional periods for years and may even become pregnant. Women with premature menopause stop having periods and can't become pregnant.

Q-57

A 33 year old woman with a background history of sickle cell disease complains of heavy menstrual blood loss over the past year. She is not sexually active and has no plans for children in the near future. What is the SINGLE most appropriate management?

A. Combined oral contraceptive pill (COCP)
B. Intrauterine system (IUS)
C. Depot medroxyprogesterone acetate (DMPA)
D. Copper intrauterine device
E. Progestogen only pill (POP)

ANSWER:
Depot medroxyprogesterone acetate (DMPA)

EXPLANATION:
There is always concern about women with sickle cell disease using hormonal medications as there is the fear that their blood vessels would be blocked by blood clots.

The first step towards picking an answer here is using UKMEC as a guide:

- Sickle cell disease is considered UKMEC 2 for copper IUD as there are concerns of increased risk of blood loss with its use
- Sickle cell disease women may use progestogen-only implants, depot medroxyprogesterone acetate (DMPA) or progestogen only pill (POP) as evidence concludes that these do not have adverse effects on haematological parameters (UKMEC 1)
- Mirena coil (IUS) is also considered UKMEC 1 and is generally associated with reduced blood loss.

As COCP and IUD are UKMEC 2, they are definitely not going to be the right options when there are better alternatives (UKMEC 1)

So why pick DMPA over POP or IUS in this question?
Depot medroxyprogesterone acetate (DMPA) is a long-acting injectable contraceptive which may reduce menstrual bleeding or cause amenorrhoea with the additional benefits that it is preferred in women with sickle cell disease becaue it reduces the frequency and severity of painful crises.

Remember this note: Whilst all three (POP, IUS and DMPA) are completely safe to use in patients with sickle cell disease, evidence shows that DMPA reduces the severity of sickle crisis pain.

Q-58

A 56 year old woman who is a heavy smoker is diagnosed with cervical intraepithelial neoplasia grade 2. She is a mother of three children. She is worried of ovarian cancer because her older sister died of ovarian cancer. She has been on hormone replacement therapy for 3 years. What is the SINGLE most relevant risk factor for ovarian cancer in her case?

A. **Smoking**
B. **Family history**
C. **Cervical intraepithelial neoplasia grade**
D. **Hormone replacement therapy**
E. **Pregnancy**

ANSWER:
Family history

EXPLANATION:
Family history of ovarian cancer is an important risk factor. Women with a first-degreerelative with ovarian cancer have 3-4 times the risk of developing the disease.

However, only 10% of cases arise in women with a positive family history.Smoking is a risk factor but it is not as important as family history. It is estimated that2% of cases may be caused by smoking.

HRT increases the risk of developing ovarian cancer but only slightly and it is only seenin patients using HRT for more than five years. About 1% of cases may be linked withtaking HRT. Further studies are needed to ascertain the exact risk.

Ovarian Cancer Risk factors
• Family history: mutations of the BRCA1 or the BRCA2 gene
• Many ovulations: early menarche, late menopause, nulliparity
• Age → incidence increases with age

Protective factors against ovarian cancer:
• COCP
• Pregnancy

Q-59

An 18 year old girl who has mild learning difficulties attends the GP surgery seeking advice on contraception. She is sexually active and currently using condoms however she would like to try a different contraceptive method that is more secure. She has no relevant past medical history. What is the SINGLE most appropriate contraception for her?

A. **Nexplanon®**
B. **Depo-Provera**
C. **Intra-Uterine System (Mirena®)**
D. **Combined oral contraceptive pills (COCP)**
E. **Progestin-Only pill (POP)**

ANSWER:
Nexplanon®

EXPLANATION:
The ideal contraception for her would be an etonogestrel implant like Nexplanon ®.

Mirena® and Depo-Provera would not be ideal as it is considered UKMEC 2 under 20 years of age wehreas POP, COCP and implants are UKMEC 1 and are recommended as first line for young women.

She has mild learning difficulties and being a teenager she is likely to forget to take regular pills.

Q-60

A 34 year old woman develops a fit 6 hours after having a spontaneous vaginal delivery of a healthy term baby. She has no history of having high blood pressure and has not had a seizure before. What is the SINGLE most likely diagnosis?

A. Eclampsia
B. Subarachnoid haemorrhage
C. Epilepsy
D. Pulmonary embolism
E. Amniotic fluid embolism

ANSWER:
Eclampsia

EXPLANATION:
It is very unlikely for eclamptic fits to occur with no history of proteinuria or high bloodpressure in the past. But given that she is pregnant and just delivered, it is the mostlikely given the options.

Eclampsia does occur in the postpartum period as well as antenatally. This is why it iscommon practice to keep patients with severe pre-eclampsia in hospital for the nextfew days post delivery even though the delivery was uncomplicated.

Q-61

A 27 year old Asian primiparous woman with type 1 diabetes mellitus has delivered a baby weighing 4.5 kg with the help of forceps. The placenta was removed with continuous cord traction and her uterus is well contracted however she continues to bleed heavily. What is the SINGLE most likely cause of her postpartum haemorrhage?

A. Atonic uterus
B. Cervical or vaginal trauma
C. Retained products of conception
D. Large placental site
E. Rupture uterus

ANSWER:
Cervical or vaginal trauma

EXPLANATION:
The most common cause of postpartum haemorrhage is uterine atony however this isnot the case here as the uterus is well contracted. The risk factors point towards agenital tract trauma. Asian ethnicity, nulliparous, diabetic and big baby were thrown inas these are risk factors towards a 3rd and 4th degree perineal tear which can be thesole cause of the PPH.

Causes for PPH may be considered to relate to one or more of 'the four Ts':
• tone (abnormalities of uterine contraction)
• tissue (retained products of conception)
• trauma (of the genital tract)
• thrombin (abnormalities of coagulation).

The most common cause of primary PPH is uterine atony. However, clinicalexamination must be undertaken to exclude other or additional causes:
• retained products (placenta, membranes, clots)
• vaginal/cervical lacerations or haematoma
• ruptured uterus
• broad ligament haematoma
• extragenital bleeding (for example, subcapsular liver rupture)
• uterine inversion.

Q-62

A 33 year old diabetic woman at 41+0 weeks gestation is in labour. She is fully dilated and has been pushing for 1 hour. The fetal head is delivered with no difficulty. The shoulders restitute but with every contraction, the fetal head emerges then retracts immediately following the contraction. What is the SINGLE most appropriate next action?

A. **Emergency caesarean section**
B. **Episiotomy**
C. **Rotation maneuvers**
D. **Fetal scalp blood sample**
E. **Instrumental delivery**

ANSWER:
Episiotomy

EXPLANATION:
The term for the head retracting is called the "turtle sign". It is seen in shoulder dystocia. At this stage, the first step is to call for help then evaluate for episiotomy and start McRoberts maneuver. There is no need for an episiotomy prior to McRoberts maneuver but it is advisable to perform an episiotomy before any enter rotation maneuvers. This creates more room for the obstetrician to us his fingers and hands to perform rotation maneuvers.

Remember: Shoulder dystocia is a bony impaction, so episiotomy alone will not release the shoulder.

The diabetes thrown into this stem, is just to highlight that she has risk factos for shoulder dystocia.

RISK FACTORS FOR SHOULDER DYSTOCIA
The key risk factors to remember for shoulder dystocia can be divided into two categories:

Pre-labour risk factors
- Fetal macrosomia > 4.5 kg
- Maternal BMI > 30 kg/m^2
- Diabetes mellitus
- Previous shoulder dystocia
- Induction of labour

Intrapartum risk factors
- Prolonged labour
- Oxytocin augmentation
- Assisted vaginal delivery

SHOULDER DYSTOCIA MANAGEMENT
A good mnemonic to remember is HELPERR

Help
- Call for help

Episiotomy
- May be delayed until after pressure and McRoberts

Legs
- Position with McRoberts maneuver for 30-60 seconds
  - Flex thighs
  - Patient pulls knees towards ears

Pressure at suprapubic area
- Initial attempt: Apply pressure for 30 to 60 seconds
- Later: Rocking motion similar to CPR over the fetal anterior shoulder

Enter
- Position hands in position
  - Two fingers by anterior shoulder
  - Two fingers by posterior shoulder
- Rubin maneuver: Rotate counter-clockwise for 30-60 seconds
- Wood-Screw maneuver: Rotate clockwise for 30-60 seconds
- Reverse Woods Screw

Remove the posterior arm
- Flex eblow and sweep forearm across chest

Roll the patients to hands and knees (Gaskin maneuver or all-fours position)
- Above rotational maneuvers may be repeated if needed

Maneuvers described for left occiput position

- Rubin II maneuver
  - Two fingers placed behind anterior shoulder
  - Apply downward pressure around arc of rotation
  - Rotate presenting part clockwise for 30-60 seconds
- Wood-Screw maneuver
  - Two fingers placed in front of posterior shoulder
  - Apply upward pressure around arc of rotation
  - Rotate presenting part clockwise for 30-60 sec
- Rubin II maneuver with Wood-Screw maneuver
  - Maximizes torque for rotation
  - Difficult due to limited vaginal space for maneuver
- Reverse Wood-Screw
  - Reverse direction of rotation (counter-clockwise)

Q-63

A 42 year old primigravid woman who is now 38 weeks pregnant is brought in by her husband because of sudden onset of lower abdominal pain, back pain and vaginal bleeding. She describes blood loss of about 200 ml. She denies any trauma to her abdomen. Her uterus is tender and hard on examination. Uterine contractions can be palpated and there is still evidence of vaginal bleeding. Fetal distress is seen on CTG. She has a pulse rate of 120 beats/minute and a blood pressure of 95/60 mmHg. What is the SINGLE most likely cause of her symptoms?

A. Abdominal aortic aneurysm rupture
B. Disseminated intravascular coagulation
C. Placental abruption
D. Placenta praevia
E. Vasa praevia

ANSWER:
Placental abruption

EXPLANATION:
It is worth remembering that maternal age is a risk factor for placental abruption and those over 35 years are at greater risk. In this stem an age of 42 was used.

Although trauma may elicit placenta abruption, majority of abruptions do not have a background history of injury to the abdomen. Back pain can be a presentation of placenta abruption if the placenta is located posteriorly.

This needs to be dealth with rather urgently with an emergency caesarean section as fetal distress is often followed by fetal death in abruptions.

PLACENTAL ABRUPTION
Placental abruption is the premature separation of a normally placed placenta resulting in maternal haemorrhage behind placenta or lost through cervix.

The cause is not known but associated factors include:

- Pre-eclampsia

- Multiplarity
- Trauma
- Maternal age
- Cocaine
- Smoking

Clinical features

- Abdominal pain is constant
- Very tender and tense uterus (woody hard)
- Bleeding, which may be accompanied by pain
- Fetal distress or fetal death
- Maternal signs of hypovolemic shock if bleeding is severe

Severe abruption can result in haemorrhagic shock with acute tubular necrosis from profound hypotenion. Disseminated intravascular coagulation can result from release of tissue thromboplstin into the circulation from the disrupted placenta. One should not look at the extent of vaginal loss as an indicator of severity of abruption as maternal haemorrhage may be much much greater (it is just concealed behind the placenta)

Management

- Resuscitation and delivery if presence of fetal distress or maternal compromise.

Q-64

A 22 year old woman who was diagnosed with a missed miscarriage a week ago presented to the hospital last night with abdominal pain and vaginal bleeding. Since then, she has passed a small fetus. A transvaginal ultrasound was repeated which showed an empty uterus. The pain is slowly easing off. What is the SINGLE most likely diagnosis?

A. Threatened miscarriage
B. Inevitable miscarriage
C. Incomplete miscarriage
D. Complete miscarriage
E. Spontaneous miscarriage

ANSWER:
Complete miscarriage

EXPLANATION:
Complete miscarriage is a spontaneous abortion with expulsion of the entire fetus through the cervix. Pain and uterine contractions cease after the fetus has been expelled. An ultrasound scan would show an empty uterus.

Q-65

A 26 year old lady presents with worsening lower abdominal pain and purulent vaginal discharge. She was recently treated for pelvic inflammatory disease with antibiotics as an outpatient but did not complete her course of antibiotics. A urine HCG is negative. Cervical motion tenderness was noted when doing a pelvic examination. She has a temperature of 38.6 C and a pulse rate of 95 beats/minute. What is the SINGLE most appropriate action>?

A. **Obtain triple swabs and await results of sensitivities to determine appropriate antibiotics to prescribe**
B. **Prescribe oral doxycycline 100 mg BD and oral metronidazole 400 mg BD**
C. **Prescribe intravenous ceftriaxone 2 g OD with oral doxycycline 100 mg BD**
D. **Prescribe intravenous ceftriaxone 2 g OD only**
E. **Prescribe oral ofloxacin 400 mg BD and oral metronidazole 400 mg BD**

ANSWER:
Prescribe intravenous ceftriaxone 2 g OD with oral doxycycline 100 mg BD

EXPLANATION:
This patient clearly needs to be admitted for antibiotics. An outpatient therapy hasalready failed. She has signs and symptoms of pelvic inflammatory disease. She has ahigh temperature and tachycardia.

One of the more common inpatient regimens for pelvic inflammatory disease is IVceftriaxone 2g daily plus IV doxycycline 100mg twice daily (oral doxycycline may beused if tolerated) followed by oral doxycycline 100mg twice daily plus oralmetronidazole 400mg twice daily for a total of 14 days. Intravenous therapy should becontinued until 24 hours after clinical improvement and then switched to oral.

Although it's stated that we use intravenous doxycycline as part of the antibioticregimen, this is usually not the case as Intravenous doxycycline is not currently licensedin the UK.

Whilst taking triple swabs is appropriate, we should not wait for results before commencing antibiotics. Antibiotics should be commenced immediately as to avoid complications such as tubo-ovarian abscess or tubal damage leading to infertility. Once culture and sensitivity results are available, change of antibiotics may be required. The change usually involves ofloxacin as gonorrhoea is increasingly resistant to fluorquinolone in the UK.

OPTIONS FOR MANAGEMENT OF PID
Outpatient management of PID
• IM ceftriaxone stat plus oral doxycycline and oral metronidazole for 14 days; or
• Ofloxacin and metronidazole orally for 14 days

Inpatient management of PID
• IV ceftriaxone and IV doxycycline followed by oral doxycycline and oralmetronidazole for 14 days; or
• IV ofloxacin and IV metronidazole for a total of 14 days

Q-66

A 33 year old woman, with 3 previous normal vaginal deliveries complains of urinary leakage when she plays tennis or coughs. What is the SINGLE most likely diagnosis?

A. **Stress incontinence**
B. **Urge incontinence**
C. **Mixed incontinence**
D. **Overflow incontinence**
E. **Urtethrovaginal fistula**

ANSWER:
Stress incontinence

EXPLANATION:
Please see Q-4

Q-67

Which of the following is true regarding treatment with tamoxifen?

A. **Increased risk of endometrial carcinoma**
B. **Increased risk of breast cancer**
C. **Increased risk of osteoporosis**
D. **Increased risk of ovarian carcinoma**
E. **Increased risk of cervical cancer**

ANSWER:
Increased risk of endometrial carcinoma

EXPLANATION:
Tamoxifen is a risk factor for endometrial carcinoma.

Tamoxifen is a Selective estrogen receptor modulator (SERM) used in the treatment ofbreast cancer. Even though it acts as an antagonist in breast tissue, it acts as anagonist on the endometrium thus there is an increased risk of endometrial cancer. There isalso an Increased risk of thromboembolism. One benefit from tamoxifen is that itprevents bone loss by acting as an estrogen receptor agonist.

Q-68

A 31 year old woman presents to the emergency department with a lower abdominal pain and per vaginal bleeding one day after having a hysterosalpingography as a part of her infertility treatment. Her blood pressure is 85/50 mmHg and pulse rate is 125 beats/minute. On examination, the abdomen is rigid and tender. What is the SINGLE most appropriate step in investigation?

A. **Computed tomography**
B. **Abdominal X-ray erect and supine**
C. **Ultrasound abdomen and pelvis**
D. **Coagulation profile**
E. **Beta hCG**

ANSWER:
Ultrasound abdomen and pelvis

EXPLANATION:
A hysterosalpingography is a type of radiographic evaluation that looks at the uterusand fallopian tubes predominantly as part of investigation for infertility. It uses acontrast material that is injected into the cervical canal that appears on real-time X-ray(fluoroscopy) to visualise the fallopian tubes to determine if the tubes are partially orfully blocked. If the fallopian tubes are patent, the contrast medium will fill the tubesand spill out into the abdominal cavity.

Complications associated with a hysterosalpingogram include the possibility of anallergic reaction to the dye or infection (endometritis or salpingitis), which areuncommon. Uterine perforation or fallopian tube perforation like in this stem are alsopossible complications, but these are very rare.

If a perforation were to occur, the patient may have bleeding intraabdominally and anultrasound scan would be a good start to evaluate the severity of the bleeding. Thepicture given in this stem with a low BP, rapid heart rate, abdominal rigidity and absentrash does point towards a likely intra abdominal bleed.

In a real clinical setting, a laparoscopy or laparotomy would be a more suitable optionas she is clinically unstable. As these options are not provided, ultrasound would be thenext best investigation.

Q-69

A 25 year old woman has vaginal discharge, intermenstrual bleeding and post coital bleeding. A vulvovaginal swab was taken which tested positive for Neisseria gonorrhaee. What is the SINGLE most appropriate management?

A. **Erythromycin**
B. **Ceftriaxone only**
C. **Metronidazole**
D. **Azithromycin**
E. **Azithromycin and ceftriaxone**

ANSWER:
Azithromycin and ceftriaxone

EXPLANATION:
Cervicitis management
If just cervicitis (Chlamydia)
• Azithromycin 1g single dose (OR doxycycline 100mg bd for 7 days) (both havesimilar efficacy of more than 95%)
Note that The 2009 SIGN guidelines suggest azithromycin should be used firstlinedue to potentially poor compliance with a 7 day course of doxycycline

If just cervicitis (Neisseria gonorrhoeae)
• Azithromycin 1g PO and ceftriaxone 500mg IM

It is important to note the differences between acute PID and just cervicitis as the management is different

Q-70

A 21 year old woman had a recent suction curettage to evacuate the contents of the uterus following a miscarriage. The histology shows changes consistent with a hydatidiform mole. What is the SINGLE most appropriate advice to be given?

A. **Barrier contraception should be used for 6 weeks**
B. **Barrier contraception should be used until serum hCG is normal and follow up is complete**
C. **Combined oral contraception is contraindicated**
D. **HRT should be used until serum hCG is normal**
E. **No contraception needed after evacuation of contents of the uterus**

ANSWER:
Barrier contraception should be used until serum hCG is normal and follow up is complete

EXPLANATION:
Serum and urine samples of hCG concentrations are extremely important.

In hydatidiform mole, hCG levels are likely to be raised excessively (especially incomplete moles). Management would involve surgical evacuation, after which the hCGlevels are expected to return to a normal, non-pregnant level.

We would like the hCG to go down towards a normal level but If it plateaued or if hCGlevels rise after evacuation, chemotherapy is indicated.

This is the reason it is so important not to get pregnant during the time that hCG levelsare decreasing as if one were to get pregnant, hCG levels would increase again and wewill not know if it is due to the hydatidiform mole or the new pregnancy.

The best advice to give is use barrier contraception until serum hCG is normal and follow up is complete. Fortunately, in the UK, women who have a molar pregnancy are enrolled into a national follow-up programme based where they can have repeated hCG measurements. For example, follow up for molar pregnancies in England are done in Charing Cross Hospital where they have a Trophoblastic Tumour Screening and Treatment Centre.

The previous guidance for oral contraception use was to use only once hCG levels have normalised. However, the advice is now changing and the latest advice is that oral contraception has no role in increasing the risk of invasive mole or choriocarcinoma from developing and hence oral contraception may be used after molar evacuation, before hCG returns to normal values.

Q-71

A 30 year old lady presents to the outpatient clinic with difficulty in conceiving for the past 2 years. She and her husband have been trying to achieve pregnancy for more than 2 years and have been unsuccessful. There is no previous history of pelvic inflammatory disease. She has a BMI of 23. She has a regular 32 day menstrual cycle. What is the SINGLE most appropriate test to perform to assess ovulation?

A. **Follicular stimulating hormone (FSH) and luteinizing hormone (LH)**
B. **Day 21 progesterone**
C. **Day 25 progesterone**
D. **Day 28 progesterone**
E. **Oestrogen levels**

ANSWER:
Day 25 progesterone

EXPLANATION:
Serum progesterone (Mid-luteal cycle progesterone) is tested one week before amenstrual period is expected. Example, on day 21 of a 28 day menstrual cycle. In thiscase, since she has regular 32 day menstrual cycles, the serum progesterone should betaken on day 25 (32 days - 7 days = day 25).

A serum progesterone more than 30 nmol/L is consistent with ovulation and no furtherbiochemical assessment is required.

As part of the management for infertility, FSH and LH is usually taken in clinics.However in this context, since her menses are regular, it is less important. It is usuallymeasured if there is menstrual irregularity to help exclude conditions like prematureovarian insufficiency (LH and FSH both raised), polycystic ovarian syndrome (LH:FSHratio increased) and hypogonadotropic hypogonadism (LH and FSH reduced).

Q-72

A 24 year old lady has lower abdominal pain worsening over the last 2 days. She has vaginal discharge and also complains of deep dyspareunia. A urine HCG is negative. Cervical motion tenderness was noted when doing a pelvic examination. She has a temperature of 38.0 C. Her blood tests show:

White cell count 14 x 10^9/L
CRP 50 mg/L

She has no significant past medical history. What is the SINGLE most appropriate antibiotic treatment?

A. Ofloxacin and metronidazole
B. Azithromycin
C. Azithromycin and ceftriaxone
D. Doxycycline
E. Clindamycin

ANSWER:
Ofloxacin and metronidazole

EXPLANATION:
Please see Q-65

Q-73

A 32 year old rhesus negative woman whose previous pregnancy was complicated by recurrent antepartum haemorrhage. At booking she was found to have anti-D antibodies and was referred for obstetric-led care. An ultrasound scan 1 week ago showed normal growth of the fetus. She now presents with reduced fetal movements at 33 weeks gestation. A CTG is normal. What is the SINGLE most appropriate investigation?

A. **Kleihauer-Betke test**
B. **Coagulation profile**
C. **Anti-D immunoglobulin**
D. **Assess fetal middle cerebral artery on ultrasound**
E. **Fetal blood sampling**

ANSWER:
Assess fetal middle cerebral artery on ultrasound

EXPLANATION:
This woman has developed anti-D immunoglobulins (Rhesus isoimmunisation) as a result of recurrent antepartum haemorrhages in a previous pregnancy. The fetus is at risk of these antibodies crossing the placenta, leading to fetal anaemia and hydrops fetalis.

Assessing the fetal middle cerebral artery on ultrasound allows estimation of fetal haemoglobin concentrations and therefore the severity of fetal anaemia. This is usually performed in a rhesus negative women following rhesus isoimmunized in a previous pregnancy.

Fetal cord blood sampling is an option to directly quantify fetal haemoglobin concentration, but is only indicated if the peak systolic velocity (PSV) of the middle cerebral artery (MCA) is abnormal.

A Kleihauer-Betke test is used to confirm and quantify a maternal-fetal haemorrhage in the preventioin of Rhesus isoimmunization. It has no role in women who are already sensitised.

Q-74

A 55 year old woman presents with dysuria, frequency and urinary incontinence. She complains of dyspareunia. Urine culture has been done and is sterile. What is the SINGLE most appropriate course of action?

A. **Oral antibiotics**
B. **Topical antibiotics**
C. **Topical oestrogen**
D. **Hormone replacement therapy**
E. **Oral oestrogen**

ANSWER:
Topical oestrogen

EXPLANATION:
One of the many causes of dyspareunia is atrophic vaginitis (vaginal atrophy).

Oestrogen deficiency after menopause causes atrophic changes within the urogenitaltract and is associated with urinary symptoms, such as frequency, urgency, nocturia,incontinence, and recurrent infection. These symptoms may coexist with those ofvaginal atrophy, including dyspareunia, itching, burning, and dryness.

Intravaginal oestrogens is the treatment choice for vaginal atrophy. Alongside helpingwith the vaginal dryness, it can help with symptoms of urgency, urge incontinence,frequency, and nocturia.

Note as the symptoms are local (in the vagina), you would not prescribe a systemichormone like oral oestrogen or HRT. Thus options D and E are out.

Q-75

A 24 year old woman has right iliac fossa pain and vaginal spotting. Her last menstrual period was 8 weeks ago. She is pyrexial. A bimanual examination reveals cervical excitation. What is the SINGLE most likely diagnosis?

A. **Ectopic pregnancy**
B. **Salpingitis**
C. **Endometriosis**
D. **Ovarian torsion**
E. **Ovarian tumour**

ANSWER:
Ectopic pregnancy

EXPLANATION:
Salpingitis, endometriosis, ovarian torsions and ovarian tumours are not associatedwith amenorrhoea.

Patients pelvic pain and vaginal bleeding with peritonism and cervical excitationobviously points towards ectopic pregnancy.

Q-76

A 38 year old woman requires long term contraception. She has 3 healthy children and does not wish to have any more children in the near future. Upon examination, she is found to have extensive fibroids which are distorting her uterine cavity. She says she has difficulty in remembering to take pills. What is the SINGLE best contraception for her?

A. **Nexplanon®**
B. **Depo-Provera**
C. **Intra-Uterine System (Mirena®)**
D. **Combined oral contraceptive pills (COCP)**
E. **Progestin-Only pill**

ANSWER:
Nexplanon®

EXPLANATION:
The key to choosing the correct answer here is to take into account firstly the fact thatthis woman has fibroids which are distorting her uterine cavity and the fact that anytype of pill is not an option.

Depo-provera, even though a viable option, isn't the correct option for this stem.Depo-provera has a dosing interval of 13-16 weeks which is a pretty long time, but outof all the options is not the longest time.

An Intra-Uterine System (Mirena) which is the favorite of British examiners is not thechoice here because insertion of an intra-uterine device would be difficult due to thefibroid uterus that is distorting the uterine cavity. The use of an Intra-Uterine System(Mirena) is contraindicated in women with congenital or acquired uterine anomaly,including fibroids if they distort the uterine cavity.

In actual fact and in clinical practice, having a large fibroid that distorts the uterine cavity is NOT a contraindication for insertion of a mirena coil. Gynaecologist still use mirena coils for patients with large fibroids that distort the cavity. While it is true that the risk of expulsion of a mirena coil is greater if the fibroid is large, there is no reason why it cannot first be tried. However, for the purpose of the exam, since the prescribing leaflet does mention that it is contraindicated if fibroids distort the uterine cavity, please do not choose the mirena coil as the answer.

Nexplanon® is the only contraceptive implant on the UK market. Nexplanon® is a 4 cmflexible rod containing 68 mg etonogestrel (a progestogen) which is released slowlyinto the systemic circulation following subdermal insertion in the upper arm. It must beremoved after three years when it can be replaced immediately. Progestogen-onlysubdermal implants (POSDIs) such as Nexplanon® are suitable for:
• Those who want a reliable but reversible form of contraception which does notrequire daily vigilance or action at the time of intercourse.
• Women who have contra-indications to oestrogen therapy

Q-77

A 39 year old woman has had no menstrual periods for the last 11 months. Prior that she had regular menstrual cycles. She recently has had hot flashes and night sweats. She is also experiencing feelings of anger and helplessnes. FSH was done and it was raised on two separate occasions. What is the SINGLE most appropriate management?

A. **Hormone replacement therapy (HRT) for 5 years**
B. **Hormone replacement therapy (HRT) until age 51**
C. **Tricyclic antidepressants**
D. **Levothyroxine**
E. **Progestogen-only pill (POP)**

ANSWER:
Hormone replacement therapy (HRT) until age 51

EXPLANATION:
Hormone replacement therapy is an important part of management for women with premature ovarian failure to reduce the risk of osteoporosis, cardiovascular disease and maintain sexual health and quality of life. This should be continued until the average age of menopause in UK which is 51.

Q-78

A 21 year old woman comes to your clinic with the complaint of per vaginal spotting. This has occurred 3 times in the last week. She was commenced three weeks ago on the combined oral contraceptive pill. Upon further questioning, she says that she has been taking the pill regularly and a pregnancy test has been shown to be negative. She also gives no history of pain, dyspareunia, abnormal vaginal discharge or postcoital bleeding. She is in a long term, stable relationship. What is the SINGLE best management for this patient?

A. **Switch to progesterone-only pill**
B. **Stop the COCP and switch to barrier methods of contraception**
C. **Mirena coil**
D. **Depot progesterone**
E. **Reassure**

ANSWER:
Reassure

EXPLANATION:
Irregular bleeding whilst taking hormonal contraception is a common problem. A small percentage of women may also experience breakthrough bleeding or spotting however, the bleeding usually settles with time, and it is therefore recommended that women preserve for three months before considering changing their method of contraception.

Q-79

A 29 year old primigravida at 36 weeks gestation is found to have a blood pressure of 150/100 mmHg on routine check-up. Her booking blood pressure was 120/80 mmHg. She was brought to the obstetric unit where her blood pressure was repeated twice and was found to be 150/105 mmHg and 158/110 mmHg. A urinalysis shows 2+ protein. She is not experiencing any symptoms and feels well. What is the SINGLE best management for her?

A. **Labetalol**
B. **Hydralazine**
C. **Indapamide**
D. **Losartan**
E. **Magnesium sulphate**

ANSWER:
Labetalol

EXPLANATION:
Labetalol is the most studied antihypertensive in pregnancy with the safest profile. Although this woman has pre-eclampsia and would benefit from magnesium sulphte to prevent seizures, you must first stabilize her blood pressure to prevent intracerebral bleeding.

According to current NHS guidelines IV magnesium sulphate is administered for:
- Women in a critical care setting who have severe hypertension or severe preeclampsia who have or previously had an eclamptic fit.

• Women with severe preeclampsia who are in a critical care setting if birth is planned within 24 hours.

PRE-ECLAMPSIA

Pre-eclampsia is a condition seen after 20 weeks gestation characterised by pregnancy-inducedhypertension in association with proteinuria (> 0.3g / 24 hours). Oedema usedto be third element of the classic triad but is now often not included in the definition asit is not specific.

Risk factors

• Pre-existing hypertensive disease in pregnancy
• Type 1 or 2 diabetes
• Chronic kidney disease
• Chronic hypertension
• Autoimmune disease (e.g. systemic lupus erythematosus or antiphospholipid syndrome)
• > 40 years old or teenager
• Family history (mother or sister)
• Obesity
• Multiple pregnancy
• Pregnancy interval more than 10 years

Symptoms

• Headache
• Visual disturbance (flashing lights)
• Epigastric or right upper quadrant (RUQ) pain
• Rapid oedema (especially on the face)

Note: Symptoms usually occur only with severe disease

Signs

• Hypertension (>140/90; severe if >/=160/110).
• Proteinuria (>300 mg in 24 hours)
• Hyperreflexia

Management

- Guidelines recommend treating blood pressure > 150/100 mmHg although many clinicians have a lower threshold.
- Oral labetalol is now first-line following the 2010 NICE guidelines. Nifedipine and hydralazine would also be an option if PLAB part 1 has them in the question.
- Cure is delivery of placenta. Thus the definitive management is to deliver baby.
    - Unfortunately this needs to be balanced out with gestation as we would not want to deliver a baby too prematurely.

Q-80

A 42 year old complains of heavy blood loss per vaginum. An ultrasound shows uterine thickness of more than 12 mm. There were no polyps or benign lesions seen on hysteroscopy. Histology reveals the diagnosis of simple endometrial hyperplasia without atypia. She has two children and is not currently planning for another child. What is the SINGLE most appropriate management for her?

A. **Mefenamic acid**
B. **Combined oral contraceptive pills**
C. **Progestogen-only pill**
D. **Copper intrauterine contraceptive device**
E. **Levonorgestrel intra-uterine system**

ANSWER:
Levonorgestrel intra-uterine system

EXPLANATION:
Endometrial hyperplasia
Endometrial hyperplasia is a premalignant condition, that can predispose to, or beassociated with, endometrial carcinoma.

It is characterized by the overgrowth of endometrial cells and is caused by excessunopposed oestrogens, either endogenous or exogenous, similar to endometrialcancer,with which it shares a common aetiology

Presentation
• Usually presents clinically as abnormal vaginal bleeding (intermenstrual, polymenorrhoea or postmenopausal)
• It is most commonly diagnosed in women over 40 years old with irregular menstruations or in those with post-menopausal bleeding

Investigation:
• Transvaginal ultrasound (TVUS) is an appropriate first-line procedure. Ingeneral, the thicker the endometrium seen on ultrasound, the higher thelikelihood of important pathology, ie endometrial cancer, being present.
• Endometrial sampling or formal endometrial curettage is necessary fordiagnosis.

Management of endometrial hyperplasia (no atypia)
It largely depends on age of patient, histology, symptoms, and desire for retainingfertility.

Both continuous oral progestogens and levonorgestrel-releasing intrauterine systemare effective in achieving regression of endometrial hyperplasia without atypia.However, the Royal College of Obstetrics and Gynaecology (Green-top Guideline No.67, 2016) clearly states that levonorgestrel-releasing intrauterine system should be thefirst-line medical treatment because compared with oral progestogens it has a higherdisease regression rate with a more favourable bleeding profile and it is associatedwith fewer adverse effects.

Q-81

A 30 year old 34 weeks of gestation primiparous woman attends the GP surgery for her routine antenatal clinic appointment. She feels well herself with no complaints other than slight swelling of her feet. She is happy with baby movements and the fetal heart is heard using a handheld doppler. She has a blood pressure of 148/95 mmHg and her urinalysis shows 3+ protein. Her blood pressure was repeated again in clinic and was 143/93. Her booking blood pressure was 130/80 mmHg. What is the SINGLE most appropriate action?

A. **Refer for a same day assesment in the maternal unit**
B. **Refer for a routine midwife appointment**
C. **Refer for a routine obstetric appointment**
D. **Review again in the GP surgery in a week**
E. **Reassure, no action required**

ANSWER:
Refer for a same day assessment in the maternal unit

EXPLANATION:
She is classified as a person with new onset of hypertension (mild pre-eclampsia in this case since there is proteinuria). In pregnancy, we treat this very seriously. She should be asked to see the obstetric team on the same day for further assessment, blood test and to further quantify protein in the urine.

If her blood test come back at an acceptable level and she is asymptomatic, she would be advised to take blood pressure measurements at least four times a day at home and to come back if the blood pressure is higher than 150/100 as this figure is the cut off where we would start antihypertensive treatment (usually oral labetalol if in an outpatient setting).

Q-82

A 32 year old woman was induced at 41+2 weeks gestation. She had a long labour which lasted 24 hours. The uterus is still palpable above the umbilicus after an hour from delivering the placenta. What is the SINGLE most likely cause for her postpartum haemorrhage?

A. **Atonic uterus**
B. **Cervical or vaginal trauma**
C. **Ruptured uterus**
D. **Fibroid uterus**
E. **Disseminated intravascular coagulation (DIC)**

ANSWER:
Atonic uterus

EXPLANATION:
Uterine Atony
Uterine Atony is the most common cause of excessive postpartum bleeding.

Risk Factors for uterine atony include:
• Rapid or protracted labour (most common),
• Chorioamnionitis
• Overdistended uterus → e.g. Macrosomic baby

Clinical Findings
A soft uterus palpable above the umbilicus.

Management
Uterine massage and uterotonic agents (e.g., oxytocin)

Q-83

A 23 year old woman comes to the A&E with severe abdominal pain. Her blood pressure is 120/85 mmHg and temperature is 38.9 C. The abdomen is rigid. Cervical excitation is noticed during a vaginal examination. She gave a past history of pelvic inflammatory disease 3 years ago which was successfully treated with antibiotics. What is the SINGLE most appropriate investigation?

- **A. Ultrasound**
- **B. Abdomen X-ray**
- **C. CT abdomen**
- **D. High vaginal swab**
- **E. Endocervical swab**

ANSWER:
Ultrasound

EXPLANATION:
The possible diagnosis here is a pelvic abscess or tubo-ovarian abscess which arecomplications of PID. A high vaginal swab or endocervical swab can take days to returnwith results. As this is a A&E case, an ultrasound would be more appropriate as thiswould lead to a diagnosis.
Ultrasound scan is the diagnostic imaging method of choice for acute pelvic pain ingynaecology. It can easily diagnose sequelae of PID (including pyosalpinx and tuboovarianabscess).

Note that even if no PID history was given in this question, an ultrasound scan would still be the most appropriate as it would rule out ovarian cyst or adnexal torsion.

Q-84

A 24 year old lady presents with lower abdominal pain for the last 3 months, dysuria, dyspareunia and vaginal discharge. Urine HCG is negative. She has no significant past medical history. What is the SINGLE most appropriate next step in management?

- **A. Laparoscopy**
- **B. Endocervical swab**
- **C. Hysteroscopy**
- **D. Laparotomy**
- **E. Ultrasound**

ANSWER:
Endocervical swab

EXPLANATION:
Women of her age group (< 25 years old) are of greater risk for pelvic inflammatory disease as they are more sexually active during this period. An endocervical swab is the first test to do to help diagnose PID.

Q-85

A 25 year old woman is concerned about cervical cancer as her mother was recently diagnosed with cervical cancer. She is sexually active and would like to know which method of contraception would decrease the risk of cervical cancer?

- **A. Combined oral contraceptive pill**
- **B. Intrauterine system**
- **C. Intrauterine copper device**
- **D. Progestogen only pill**
- **E. Condoms**

ANSWER:
Condoms

EXPLANATION:
Condoms reduce the risk of HPV infections and hence reduce the risk of developing cervical cancer.

Q-86

A 27 year old lady has had an uncomplicated pregnancy so far. She is now 40 weeks gestation. She came to the hospital 2 hours ago after her waters broke. She has regular and painful uterine contractions. PV examination reveals a 4 cm dilated cervix. Her vital signs are normal. What stage of labour is she in?

- **A. First stage**
- **B. Second stage**
- **C. Third stage**
- **D. Fourth stage**
- **E. Latent phase**

ANSWER:
First stage

EXPLANATION:
Please see Q-50

Q-87

A 33 year old woman who is 11 weeks gestation attends her booking appointment with questions regarding vaccinations in pregnancy. What vaccines are offered to women who are pregnant in the UK?

- **A. Pertussis, diphtheria and pneumococcal vaccines**
- **B. Influenza and rubella vaccines**
- **C. Infleunza and pneumococcl vaccines**
- **D. Pertussis and rubella vaccines**
- **E. Influenza and pertussis vaccines**

ANSWER:
Influenza and pertussis vaccines

EXPLANATION:
There are two vaccines which are specifically recommended for pregnant women: theflu (influenza) vaccine and the whooping cough (pertussis) vaccine.

For whooping cough the best time to get vaccinated is between 20 weeks and 32weeks gestation. This maximises protection for the baby through antibody transfer.

Note that there is actually no whooping cough-only (pertussis) vaccine. The vaccine isusually combined with polio, diphtheria and tetanus.

Q-88

A 23 year old woman presents with offensive vaginal discharge. A vaginal pH was taken and reads 5.6. What is the SINGLE most likely causative organism?

A. Gardnerella vaginalis
B. Trichomonas vaginalis
C. Candida albicans
D. Chlamydia trachomatis
E. Neisseria gonorrhoeae

ANSWER:
Gardnerella vaginalis

EXPLANATION:
Please see Q-16

Q-89

A 34 year old primigravid cocaine user who is 30 weeks pregnant presents to the labor ward with a history of constant abdominal pain for the last 8 hours. She gives a history of having had lost a cupful of fresh blood per vagina before the pain started. She has not felt any movements since the pain started. She has a tender lower abdomen on examination. She has a pulse rate of 105 beats/minute. Fetal heart is unfortunately not seen on the ultrasound scan. What is the SINGLE most likely diagnosis?

A. Abruption of placenta secondary to pre-eclampsia
B. Abruption of placenta
C. Uterine rupture
D. Early labour
E. Missed miscarriage

ANSWER:
Abrupton of placenta

EXPLANATION:
The absence of a fetal heart seen on an ultrasound suggests intrauterine death which could be a complication of most of the given options however the presentation of bleeding and constant abdominal pain indicates placental abruption. There are no signs and features suggestive of preeclampsia.

Cocaine use in pregnancy is one of the risk factors for placental abruption. A point worth remembering as it is commonly asked.

It is extremely rare for a primigravid woman to have a ruptured uterus in the absence of any previous uterine scar. The stem would usually include past histories of caesarean sections or myomectomies for the question writers would want you to pick uterine rupture as the answer.

Q-90

A 49 year old woman who is a heavy smoker is worried of ovarian cancer because her mother died of ovarian cancer. She has been on hormone replacement therapy. She used to take combined oral contraceptive pills for a few years during her twenties. She underwent menopause when she was 46 years old. What is the SINGLE most relevant factor for ovarian cancer in her case?

A. **Smoking**
B. **Family history**
C. **Combined oral contraceptive pills**
D. **Hormone replacement therapy**
E. **Early menopause**

ANSWER:
Family history

EXPLANATION:
Please see Q-58

Q-91

A 31 year old woman who had a normal delivery 4 weeks ago is complaining for feeling tired. A full blood count was taken and results show:

Hb 9.3 g/dL
MCV 79 fL

What is the SINGLE most appropriate management?

A. **Folate supplement**
B. **Ferrous sulphate**
C. **Iron dextran**
D. **Iron infusion**
E. **No treatment required**

ANSWER:
Ferrous sulphate

EXPLANATION:
Iron deficiency anaemia is very common in pregnancy.

The values of anaemia differ in pregnancy as compared to a non pregnant woman

The British Committee for Standards in Haematology has defined anaemia inpregnancy as the following values
Hb levels of:
<11.0g/dl in the first trimester
<10.5 g/dl in the second and third trimesters
<10.0 g/dl in the postpartum period.

Since her Hb level is below 10 g/dL, she should be on oral iron.

Q-92

A 23 year old woman presents with offensive, homogenous grey-white vaginal discharge. Clue cells are demonstrated on a saline smear. What is the SINGLE most likely diagnosis?

A. **Bacterial vaginosis**
B. **Trichomoniasis**
C. **Candidiasis**
D. **Chlamydia infection**
E. **Neisseria gonorrhoeae infection**

ANSWER:
Bacterial vaginosis

EXPLANATION:
Please see Q-16

Q-93

A 24 year old woman who is 15 weeks pregnant presents with pain in her lower abdomen for the past couple of hours. She has some vaginal spotting. On examination, abdomen is tender, and cervical os is closed. A tansvaginal ultrasound scan shows no fetal heartbeat or fetal activity. What is the SINGLE most likely diagnosis?

A. **Threatened miscarriage**
B. **Inevitable miscarriage**
C. **Incomplete miscarriage**
D. **Missed miscarriage**
E. **Spontaneous miscarriage**

ANSWER:
Missed miscarriage

EXPLANATION:
It is important to note that missed miscarriage may present with heavy vaginalbleeding or none at all. But if there is no fetal heart seen, at this stage of pregnancy, itis a missed miscarriage. Note that in normal pregnancy the fetal heart is seen usually at6 weeks. So you should not be diagnosing a missed miscarriage if a 4 week pregnantlady has no fetal heartbeat seen on a transvaginal ultrasound.

There are more specific ultrasound criterias to diagnose missed miscarriage but arebeyond what will be asked in PLAB part 1.

Q-94

A 33 year old woman has vaginal spotting 2 days ago that is painless. She is worried of cervical cancer. She is currently on combined oral contraceptives and had a cervical smear last year which was reported as normal. Her last menstrual period was 14 days ago. Cervical ectropion is diagnosed on examination. There was no bleeding from the cervix on touch. What is the SINGLE most appropriate next step?

A. **Transvaginal ultrasound**
B. **Cervical smear**
C. **High vaginal swab**
D. **Reassurance**
E. **Colposcopy**

ANSWER:
Reassurance

EXPLANATION:
There is no screening test needed for cervical ectropion as cervical ectropion is notlinked to the development of cervical cancer or any other condition that causes cancer.Treatment can be offered if the cervical ectropion is causing problems such as bleedingor pain during or after sex. However in this case, the cervix is not bleeding on touchthus no treatment is needed.

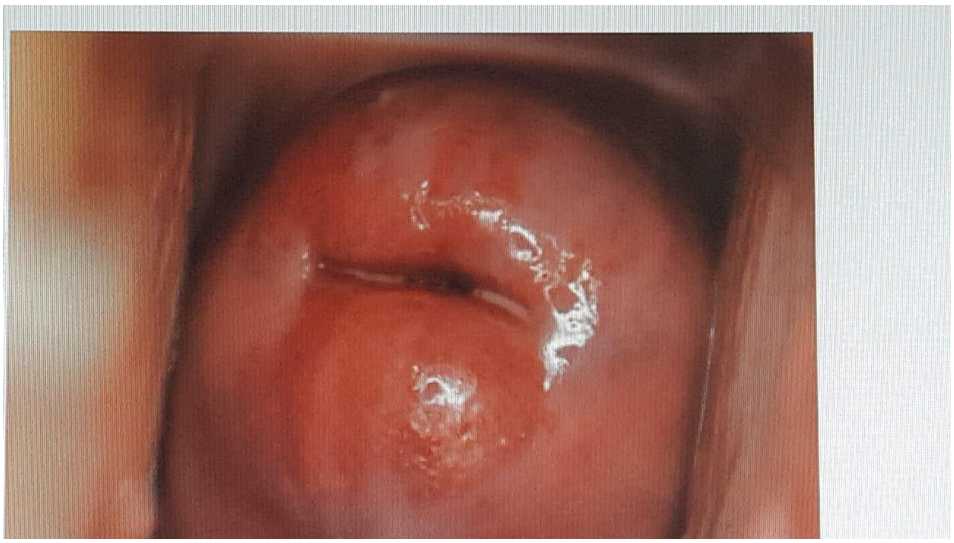
Remember: An asymptomatic cervical ectropion should be left alone

Cervical ectropion

- This occurs when the columnar epithelium of the endocervix is displayed beyond the os. The stratified squamous epithelium that normally lines the vaginal part of the cervix (ectocervix) is replaced by columnar epithelium, which has migrated from the endocervix.
  - The cervix enlarges under the influence of oestrogen and as a result the endocervical canal is everted. Exposure of high levels of oestrogen usually occurs at certain times (e.g. puberty, in pregnancy or women on COCP)
  - It is seen on examination as a red ring around the os and is so common as to be regarded as normal
  - It is generally an asymptomatic condition but patients occasionally present with bleeding or excessive discharge
  - The discharge if present is usually clear, watery in consistency and without odour
  - Once a normal cervical smear has been confirmed, it is actively managed only if there are symptoms.
  - After stopping any oestrogen-containing contraceptive, treatment options include diathermy, or cryotherapy

CERVICAL ECTROPION
Cervical ectropion occurs when the columnar epithelium of the endocervix is displayed

beyond the cervical os. The stratified squamous epithelium that usually lines the vaginal part of the cervix (ectocervix) is replaced by columnar epithelium, which has migrated from the endocervix



Cervical ectropion – red ring around the os

The cervix enlarges under the influence of oestrogen, and as a result, everts the endocervical canal. Exposure of high levels of oestrogen usually is seen in pregnancy or women on COCP.

It is usually asymptomatic however woman occasionally present with post-coital bleeding or excessive non-purulent discharge.

It is managed if symptoms are bothersome. Treatments include cautery with silver nitrate, diathermy and cryotherapy. That being said, it is essential to obtain a cervical smear and ensure it is normal prior to any treatments.

Q-95

A 28 year old primiparous woman, with no previous history of infection with herpes zoster, is 18 weeks pregnant. She had significant contact with a young girl with widespread chicken pox 8 days ago. Serum stored from an antenatal booking blood sample was sent for serology and came back negative for VZV IgG. She has no rash at present. What is the SINGLE most appropriate management?

A. **Oral aciclovir**
B. **Intravenous aciclovir and varicella-zoster immunoglobulin (VZIG)**
C. **Intravenous aciclovir**
D. **Reassure**
E. **Intravenous varicella-zoster immunoglobulin (VZIG)**

ANSWER:
Intravenous varicella-zoster immunoglobin (VZIG)

EXPLANATION:
The incubation period between exposure and the first skin lesions is around 10 to 14

days but can be as long as 21 days. She was only exposed 8 days ago. The best management here is to administer varicella-zoster immunoglobulin (VZIG) as it is effective when administered up to 10 days after contact.

Chickenpox exposure in pregnancy
Chickenpox is caused by primary infection with varicella zoster virus. Shingles isreactivation of dormant virus in dorsal root ganglion. In pregnancy there is a risk toboth the mother and also the fetus, a syndrome now termed fetal varicella syndrome

Fetal varicella syndrome (FVS)

- risk of FVS following maternal varicella exposure is around 1% if occurs before 20 weeks gestation studies have shown a very small number of cases occurring between 20-28 weeks gestation and none following 28 weeks
- features of FVS include skin scarring, eye defects (microphthalmia), limb hypoplasia, microcephaly and learning disabilities

Other risks to the fetus
shingles in infancy: 1-2% risk if maternal exposure in the second or thirdtrimester severe neonatal varicella: if mother develops rash between 5 daysbefore and 2 days after birth there is a risk of neonatal varicella, which may befatal to the newborn child in around 20% of cases

Management of chickenpox exposure
PLAB usually would test your knowledge on 3 of these scenarios:
1. *Who gets checked for Varicella antibodies?*
If the woman's immunity to chickenpox is unknown and if there is any doubtabout previous infection, or if there is no previous history of chickenpox orshingles, serum should be tested for VZV IgG. This can usually be performedwithin 24–48 hours and often within a few hours if the laboratory can accessserum stored from an antenatal booking blood sample. At least 80% of womentested will have VZV IgG and can be reassured.

2. *Who gets VZIG?*
If the pregnant woman is not immune to VZV and she has had a significantexposure, she should be offered VZIG as soon as possible. VZIG is effectivewhen given up to 10 days after contact.

Note: If the immune status of the woman is unknown, the administration ofVZIG can be delayed until serology results are available

Note: VZIG has no therapeutic benefit once chickenpox has developed andshould therefore not be used in pregnant women who have developed achickenpox rash.

3. Who gets oral aciclovir?
Oral aciclovir should be prescribed for pregnant women with chickenpox ifthey present within 24 hours of the onset of the rash and if they are 20+0weeks of gestation or beyond.

In summary:

1. Pregnant exposed to chicken pox → Check women's immunity (previous infection, varicella antibodies)
2. Not immuned → Administer VZIG
3. If develop chicken pox rash → Administer oral aciclovir

Q-96

A 22 year old woman is brought into the Emergency Department by her husband with severe abdominal cramping. Her abdomen is very tender. Serum beta human chorionic gonadotrophin (hCG) was measured at 1400 IU/litre. A transvaginal ultrasound reveals an empty uterine cavity with a small right adnexal mass measuring 20 mm and free fluid in the pelvis. No fetal heart activity was noted. Her systolic blood pressure was 110 mmHg on admission but has dropped to 80 mmHg an hour later. Intravenous fluids have been prescribed. What is the SINGLE most appropriate next course of action?

(A serum hCG above 25 IU/litre is considered positive for pregnancy)

A. **Laparotomy**
B. **Laparoscopy**
C. **Admit and await events**
D. **Repeat beta human chorionic gonadotrophin (hCG) in 48 hurs**
E. **Methotrexate**

ANSWER:
Laparotomy

EXPLANATION:
It is clear here that she has an ectopic pregnancy.

Laparotomy would be the choice here as she is clearly haemodynamically unstable. Anopen approach is quicker than a laparoscopic approach.

If she was haemodynamically stable, a laparoscopic approach to the surgicalmanagement of tubal pregnancy would be prefered as this has less post surgicalcomplications and reduced length of hospital stay.

Q-97

A 24 year old woman who is 18 weeks pregnant presents to the Early Pregnancy Unit with pain in her lower abdomen for the past 12 hours. She has some vaginal spotting a couple of hours ago. On examination, abdomen is tender, and cervical os is closed. An ultrasound scan shows fetal heart beat. What is the SINGLE most likely diagnosis?

A. **Threatened miscarriage**
B. **Inevitable miscarriage**
C. **Incomplete miscarriage**
D. **Missed miscarriage**
E. **Spontaneous miscarriage**

ANSWER:
Threatened miscarriage

EXPLANATION:
Please see Q-2

Q-98

A 43 year old woman who is currently 34 weeks pregnant presents to the maternal assessment unit with headache, mild epigastric pain and slight nausea. Her symptoms started in the monring. She complains of visual disturbance which include flashing lights. A dipstick shows 2+ protein. Her heart rate is 105 beats/minute. She has a blood pressure of 158/105 mmHg and 150/90 mmHg. A CTG was connected and the trace is reassuring. What is the SINGLE most appropriate initial management?

A. **Administer oral labetalol**
B. **Administer intravenous magnesium sulphate**
C. **Adminster intravenous corticosteroids and start induction of labour**
D. **Arrange for an emergency C-section**
E. **Send urine to quantify protein**

ANSWER:
Administer oral labetalol

EXPLANATION:
This lady has pre-eclampsia. The first clue in this question stems from her age. One ofthe risk factors of preeclampsia is an age over 40 or a teenager. Basically, extremes ofboth ages. Headaches, epigastric pain, flashing lights are all symptoms of preeclampsiawhich is confirmed by having protein in the urine with a BP > 140/90.

The first thing to do here is to lower the blood pressure. Management of pregnancywith pre-eclampsia for moderate hypertension (150/100 to 159/109 mmHg) starts withoral labetalol as first line treatment.

Magnesium sulphate is important here as well however labetalol oral should be givenfirst. Remember, the question is asking for the most appropriate ***INITIAL*** management.Magnesium sulphate takes awhile to prepare. It is an intravenous medication andusually needs consultant approval and also cardiac monitoring when giving theintravenous MgS04. Oral labetalol does not require any of those and it is part of themanagement as she is hypertensive in this stem.

When is magnesium sulphate the answer?
According to current NHS guidelines IV magnesium sulphate is administered for:

- *Women in a critical care setting who have severe hypertension or severe pre-eclampsia who have or previously had an eclamptic fit.*
- *OR women with severe pre-eclampsia who are in a critical care setting if birth is planned within 24 hours.*

Obviously, hospitals have their own local guidelines and many do not follow the above guidance.

Q-99

A 30 year old female who has had 3 previous miscarriages, all before 10 weeks gestation. Antiphospholipid syndrome has been diagnosed. She now presents to the antenatal clinic asking if there is any treatment that she coud have that could prevent another miscarriage. What is the SINGLE most appropriate management?

A. **Aspirin**
B. **Corticosteroids**
C. **Progesterone supplements**
D. **Folate**
E. **No treatment available**

ANSWER:
Aspirin

EXPLANATION:
The diagnosis here is antiphospholipid syndrome in which case aspirin plus heparin is indicated. As there is no option for both aspirin and heparin, pick aspirin

Q-100

A 23 year old woman who has been using an intrauterine system (Mirena coil) for one year now complains of lower abdominal pain and menstrual irregularities. She has no significant past medical history. Which is the SINGLE most likely cause of her symptoms

A. **Pelvic inflammatory disease (PID)**
B. **Endometriosis**
C. **Adenomyosis**
D. **Fibroids**
E. **Asherman syndrome**

ANSWER:
Pelvic inflammatory disease (PID)

EXPLANATION:
Intrauterine contraceptive devices are a risk factor for pelvic inflammatory disease.Women of her age group (<25 years old) are of greater risk for pelvic inflammatorydisease as they are more sexually active during this period.

Other options are less likely because:

Endometriosis, adenomyosis and fibroids → Are less likely as an intrauterine system islikely to benefit symptoms and not worsen them

Asherman syndrome → are adhesions of the endometrium often associated withdilation and curettage of the intrauterine cavity. It results in infertility. Often, theyexperience menstrual irregularities. But in this question there is no relevant pastmedical history meaning she did not have any dilation and curettage thus this option isvery unlikely.

Q-101

A 30 year old woman attends clinic asking for a reversible form of contraception. Her obstetric history is significant for a previous caesarean section one year ago. She is known to have menorrhagia and dysmenorrhoea. What is the SINGLE most appropriate contraceptive for her?

A. **Combined oral contraceptive pills**
B. **Progestogen-only pill**
C. **Implanon**
D. **Copper intrauterine contraceptive device**
E. **Levonorgestrel intra-uterine system**

ANSWER:
Levonorgestrel intrauterine system

EXPLANATION:
A previous caesarean is not a contraindication for a levonorgestrel intra-uterinesystem. Among the options, levonorgestrel intra-uterine system (Mirena coil) is thebest treatment to reduce menorrhagia. It is currently first-line treatment formenorrhagia in the UK.

Copper intrauterine contraceptive device and Implanon are more prone to haveirregular heavy bleedings compared to levonorgestrel intra-uterine system (Mirenacoil).

Q-102

A 32 year old multigravida at 32 weeks' gestation is woken up in the middle of the night with a pool of blood. She presents to the maternity unit with bleeding that has now stopped. She has no pain or uterine contractions. Fetal heart rate is regular at 145 beats/min. Examination of the uterus shows the fetus to be in a transverse lie. She has a pulse of 120 beats/minute, a blood pressure of 110/70 mmHg and a respiratory rate of 29 breaths/minute. What is the SINGLE most likely diagnosis?

A. **Placental abruption**
B. **Placenta accreta**
C. **Placenta praevia**
D. **Preterm labor**
E. **Vasa praevia**

ANSWER:
Placenta praevia

EXPLANATION:
Painless vaginal bleeding is consistent with placenta praevia. Placental abruption is associated with abdominal pain. Placenta accreta and vasa praevia are less common than placenta praevia. There is no indication that she is in labour.

Q-103

A 51 year old woman presents with a 9 month history of prolonged, slightly irregular menstrual periods. On physical examination, a normal size uterus with no adnexal masses is felt. What is the SINGLE most likely diagnosis?

A. **Menopause**
B. **Perimenopause**
C. **Ovarian carcinoma**
D. **Cervical carcinoma**
E. **Premature ovarian failure**

ANSWER:
Perimenopause

EXPLANATION:
The average age in the UK for menopause is 51.

For this question we have to go back to definitions of menopause and perimenopause.

Menopause is the permanent cessation of menstruation. It is recognized to have occurred after 12 consecutive months of amenorrhoea for which no other obvious pathological or physiological caue is present.

Peri-menopause includes the period beginning with the first clinical, biological, and endocrinological features of the approaching menopause, such as vasomotor symptoms and menstrual irregularity.

As the above question presents with irregular menstruations and not absent menstruations for a period of 12 months, perimenopause is the correct answer.

SYMPTOMS OF MENOPAUSE
The experience of each individual woman varies widely:

- Some may be asymptomatic
- Some may experience symptoms while menstruating
- Some may not experience symptoms until a year or more after their last period

Symptoms of menopause include:

- Hot flushes and night sweats (80% of women) – these are the hallmark symptoms
- Sleep disturbance
- Menstrual irregularities
- Vaginal dryness
- Loss of libido
- Urinary problems which include
  - Recurrent lower urinary tract infections
  - Urinary incontinence

Q-104

A 33 year old woman has complaints of heavy menstrual bleeding and chronic pelvic pain. A transvaginal ultrasound reveals a thick walled unilocular cyst with acoustic enhancement with diffuse homogeneous ground-glass echoes located on the left ovary. What is the SINGLE most likely diagnosis?

A. **Dermoid cyst**
B. **Ovarian endometrioma**
C. **Molar pregnancy**
D. **Benign cystic teratoma**
E. **Polycystic ovarian syndrome**

ANSWER:
Ovarian endometrioma

EXPLANATION:
A thick walled cystic structure containing homogeneous ground-glass echos are ultrasound findings of an endometrioma. Ovarian endometriomas are ovarian cysts lined by endometriotic tissue. Remember that the ground-glass appearance often describes the cyst fluid in an ovarian endometrioma. The cyst fluid is usually a thick chocolate coloured fluid which differentiates them from a simple haemorrhagic cyst.

Q-105

A 31 year old woman, gravida 5 para 4, presents to the emergency room with vaginal bleeding. She has a history of amenorrhoea for 12 weeks. Pregnancy test was done in the emergency department and it was positive. Symphyseal-fundal height measurement corresponds to 22 weeks gestation. Ultrasound of the pelvis reveals bilateral cystic masses. No fetal parts are seen during the ultrasound examination. The cervix is closed. Which is the SINGLE most likely diagnosis?

A. **Tubal pregnancy**
B. **Endometriosis**
C. **Hydatidiform mole**
D. **Threatened abortion**
E. **Ovarian hyperstimulation syndrome**

ANSWER:
Hydatidiform mole

EXPLANATION:
The ultrasound findings of the bilateral cystic masses represet the large theca lutein cysts. Uterus large for dates and the vaginal bleeding are typical features of hydatidiform mole.

Another term worth remembering for complete molar pregnancies is the “Snowstorm” appearance of mixed echogenicity which is representing hydropic villi and intrauterine haemorrhage.

Q-106

A 23 year old primigravid woman comes into the antenatal unit with painless vaginal bleeding at 37 weeks of pregnancy. She describes the bleeding amount as half a cup full. She has no uterine contractions. The fetal heart tones are regular at 140 beats/minute. On examination, abdominal palpation identifies the fetus to be in a transverse lie and the uterus is nontender. A speculum examination reveals a closed cervix with no polyps or lacerations identified. She has a pulse rate of 90 beats/minute, a blood pressure of 110/60 mmHg and a respiratory rate of 19 breaths/minute. What is the SINGLE most appropriate action?

A. **Transvaginal ultrasound**
B. **Abdominal ultrasound**
C. **High vaginal swab**
D. **Coagulation screen**
E. **Admit, observe and repeat CTG in 30 minutes**

ANSWER:
Transvaginal ultrasound

EXPLANATION:
A transverse lie at 37 weeks in a primigravid woman is the first clue that there is a mass in the way. In this case, it is the placenta. Painless vaginal bleeding is consistent with placenta praevia. Transvaginal ultrasounds are preferred for the diagnosis of placenta praevia although abdominal ultrasound scans may also be used.

Q-107

A 16 year old girl who is normally fit and healthy attends her GP complaining of very painful menstrual periods. She has a regular 28 day menstrual cycle. She denies being sexually active. What is the SINGLE most appropriate management?

A. Tranexamic acid
B. Combined oral contraceptive pills
C. Endometrial ablation
D. Levonorgestrel intra-uterine system
E. Mefenamic acid

ANSWER:
Mefenamic acid

EXPLANATION:
Dysmenorrhoea is very common among this age group. Mefenamic acid is usually the first tried management as the pain during periods may sometimes lessen over the next couple of months to years.

Dysmenorrhoea
Dysmenorrhoea can be divided into two:
- Primary dysmenorrhoea: the pain has no obvious cause.
- Secondary dysmenorrhoea: the pain is due to an underlying condition.

Primary dysmenorrhoea
• *Management:*
  • NSAIDs such as mefenamic acid with each period is usually the firsttried treatment
  • Combined oral contraceptive pills are used second line if the onlysymptom is pain
  • Mirena IUS demonstrates benefit

Secondary dysmenorrhoea
• *Common aetiology*
  • Endometriosis
  • Adenomyosis
  • PID
• *Management* → Treat the underlying condition

Q-108

A 28 year old lady presents with lower abdominal pain and increased vaginal discharge. A pregnancy test was performed and it was negative. She has a temperature of 38.5 C and also complains of deep dyspareunia. She has a pulse rate ofe 90 beats/minute. What is the SINGLE most appropriate antibiotic regimen?

A. **Doxycycline and Metronidazole**
B. **Ceftriaxone and Metronidazole**
C. **Ceftriaxone and Metronidazole and Doxycycline**
D. **Penicillin and Methotrexate**
E. **Amoxicillin and Metronidazole**

ANSWER:
Ceftriaxone and Metronidazole and Doxycycline

EXPLANATION:
OPTIONS FOR MANAGEMENT OF PID
Outpatient management of PID
• IM ceftriaxone stat plus oral doxycycline and oral metronidazole for 14 days; or
• Ofloxacin and metronidazole orally for 14 days

Inpatient management of PID
• IV ceftriaxone and IV doxycycline followed by oral doxycycline and oralmetronidazole for 14 days; or
• IV ofloxacin and IV metronidazole for a total of 14 days

Q-109

A 29 year old woman who is 33 weeks gestation attends the antenatal clinic. Her full blood count was taken when she was 28 weeks as part of an antenatal screen for anaemia. The results show:

Haemoglobin 9.6 g/dL
Mean cell volume 75 fL

She is asymptomatic. What is the SINGLE most appropriate management?

A. **Folate supplement**
B. **Iron supplements**
C. **Blood transfusion**
D. **No treatment required**
E. **Hydroxycobalamin IM**

ANSWER:
Iron supplements

EXPLANATION:
The values of anaemia differ in pregnancy as compared to a non-pregnant woman.

The British Committee for Standards in Haematology has defined anaemia inpregnancy as the following values
Hb levels of:
<11.0g/dl in the first trimester
<10.5 g/dl in the second and third trimesters
<10.0 g/dl in the postpartum period.

Since her Hb level is below 10.5g/dL, she does need iron tablets.

Q-110

A 35 year old woman has just discovered that she is pregnant. Her last menstrual period was 7 weeks ago. She has been on anti-epileptic medication for the past 3 years. What is the SINGLE most important supplement for her to start to prevent teratogenic effects in her unborn child?

A. Folic acid 400 mcg until 12 weeks
B. Folic acid 5 mg daily until 12 weeks
C. Folic acid 400 mcg daily until delivery
D. Folic acid 5 mg daily until delivery
E. Ferrous sulphate 200 mg

ANSWER:
Folic acid 5 mg daily until 12 weeks

EXPLANATION:
Advise women who are at high risk of having a child with neural tube defects to take folic acid (5 mg/day) until 12 weeks of gestation to reduce the risk of having a baby with a neural tube defect. This can be started even before conception. Women who are at high risk include:

- Diabetes
- Receiving antiepileptic medication
- Previous pregnancy with neural tube defects
- Sickle-cell disease (folic acid given throughout pregnancy)
- Thalassaemia or thalassaemia trait (folic acid given throughout pregnancy)

In addition, NICE CKS also recommends using 5 mg/day of folic acid for those who have a:

- BMI more than 30 kg/m2
- Family history of an NTD

If the woman has a low risk of conceiving a child with neural tube defects, then she should be advised to take a smaller dose of folic acid (400 mcg/day) until 12 weeks of gestation.

Q-111

A 31 year old woman has vaginal spotting after her last intercourse which was a day ago. Her last menstrual period was 10 days ago and she usually has a regular 28 day menstrual cycle. A cervical smear performed 6 months ago was shown to be normal. A speculum examination shows cervical ectropion which does not bleed on touch. What is the SINGLE most appropriate action?

A. **Transvaginal ultrasound**
B. **Cervical smear**
C. **Endocervical swab**
D. **Reassurance**
E. **Serum estradiol**

ANSWER:
Reassurance

EXPLANATION:
There is no screening test needed for cervical ectropion as cervical ectropion is not linked to the development of cervical cancer or any other condition that causes cancer. Treatment can be offered if the cervical ectropion is causing problems such as bleeding or pain during or after sex. However in this case, the cervix is not bleeding on touch thus no treatment is needed.

Q-112

A 41 year old woman presents with an offensive malodorous vaginal discharge. The discharge is clear in colour and has a distinctive fishy odour. A vaginal pH was taken and found to be 5.7. What is the SINGLE most likely causative organism?

A. **Gardnerella vaginalis**
B. **Trichomonas vaginalis**
C. **Candida albicans**
D. **Chlamydia trachomatis**
E. **Neisseria gonorrhoeae**

ANSWER:
Gardnerella vaginalis

EXPLANATION:
Bacterial vaginosis and Trichomonas vaginalis can give foul smelling discharge.

Bacterial vaginosis which is mostly caused by an overgrowth of Gardnerela vaginalis causes vaginal discharge which is gre-white and has a “fishy” smeell. The characteristic “fishy smell” is a clincher and one should pick Bacterial vaginosis (Gardnerella vaginalis) as the answer.

In trichomonas vaginalis, it can be a greenish and frothy along with vulvovaginitis i.e. strawberry cervix.

The discharge of Chlamydia and Gonorrhea is not usually foul smelling.

Candida albicans (vaginal candidiasis) has a white, ‘cheesy’ discharge. The discharge is non-offensive.

Q-113

A 33 year old woman with 2 healthy children comes to you to discuss contraceptive methods. She isfit and well. Her two children were born by vaginal deliveries. She has a stable partner and both of them do not want any further children. Which of the options below has the lowest contraceptive failure rate?

A. **Condoms**
B. **Combined oral contraceptive pills**
C. **Progesterone-only pill**
D. **Intrauterine system (Mirena coil)**
E. **Tubal ligation**

ANSWER:
Intrauterine system (Mirena coil)

EXPLANATION:
To understand failure rates of contraception, one would need to understand the Pearl index. The Pearl index is defined as the number of pregnancies occurring per 100 women years (a woman year is defined as 13 menstrual cycles).

Example, if the Pearl index is 2 for contraception X, this means that if 100 women use contraception x for 1 year, 2 of the 100 women would end up pregnant in that year.

Comparing the options above:

- Male condoms with perfect use has a Pearl index of 2
- Combined hormonal methods which include combined pill, patch and ring with perfect use has a Pearl index of 0.3
- Progesterone-only pill with perfect use has a Pearl index of 0.3
- Intrauterine system (Mirena coil) has a Pearl index of 0.2
- Female sterilisation has a Pearl index of 0.5

Looking at the Pearl index, it is clear that the Mirena IUS has the lowest risk of failure amongst the options.

Q-114

A 42 year old woman complainsof heavy bleeding and prolonged menstrual period. She is not planning for children at the moment as she already has 2 children. She smokes 20 cigarettes a day. What is the SINGLE most appropriate management?

A. **Tranexamic acid**
B. **Combined oral contraceptive pills**
C. **Mefenamic acid**
D. **Copper intrauterine contraceptive device**
E. **Levonorgestrel intra-uterine system**

ANSWER:
Levonorgestrel intra-uterine system

EXPLANATION:
Levonorgestrel intra-uterine system (Mirena) is the first-line pharmaceutical treatment for menorrhagia. Smoking is not a contraindication for use for the Mirena coil.

Q-115

A 24 year old lady has lower abdominal pain worsening over the last 7 days. She has vaginal discharge and also complains of deep dyspareunia. Her last menstrual period was 2 weeks ago. Cervical motion tenderness was noted when doing a pelvic examination. She has a temperature of 38.2 C. Her blood tests show:

White cell count 15 x 10^9/L
CRP 55 mg/L

She has no significant past medical history. What is the SINGLE most likely diagnosis?

A. **Endometriosis**
B. **Acute pelvic inflammatory disease**
C. **Ectopic pregnancy**
D. **Appendicitis**
E. **Pelvic congestion syndrome**

ANSWER:
Acute pelvic inflammatory disease

EXPLANATION:
This is a very straightforward question. Her symptoms and signs all point towards pelvic inflammatory disease (PID). A raised WBC and CRP is also consistent with PID.

Q-116

A 33 year old woman has vaginal discharge and bleeding. An endocervical swab was taken which tested positive for Chlamydia. What is the SINGLE most appropriate antibiotic to give?

A. **Erythromycin**
B. **Ciprofloxacin**
C. **Metronidazole**
D. **Cefixime**
E. **Doxycycline**

ANSWER:
Doxycycline

EXPLANATION:
Please see Q-69

Q-117

A 27 year old waitress has pelvic pain, dysmenorrhoea and increasingly heavy periods over the last 9 months. The pain is worse when she is standingfor long periods of time. She also complains of dyspareunia. A pelvic ultrasound was reported as normal. A diagnostic laparoscopy was performed which did not show any abnormalities. What is the SINGLE most likely diagnosis?

A. **Endometriosis**
B. **Uterine fibroid**
C. **Pelvic congestion syndrome**
D. **Pelvic inflammatory disease**
E. **Fibromyalgia**

ANSWER:
Pelvic congestion syndrome

EXPLANATION:
In pelvic venous congestion there are dilated pelvic veins believed to cause a cyclical dragging pain. It is worse premenstrually and after prolonged periods of standing and walking. Dyspareunia is also often present.

Non-organic dyspareunia + with symptoms similar to premenstrual syndrome + aggravated by standing = Pelvic congestion syndrome

Pelvic congestion syndrome
is a chronic medical condition in women caused by varicose veins in the lower abdomen. The condition causes chronic pain, often manifesting as a constant dull ache, which can be aggravated by standing. It is a diagnosis of exclusion where other organic causes of dyspareunia have been excluded. It may present as pain during intercourse that may be deep within the vagina with symptoms similar to premenstrual syndrome. It is caused by accumulation of blood during arousal without occurrence of orgasm. Achieving orgasm (by intercourse, masturbation, or use of a vibrator) may help to alleviate this congestion.

Q-118

A 32 year old woman presents at 39 weeks gestation of her third pregnancy. She reports having a vaginal loss of clear viscous fluids 4 days ago. She did not attend the delivery suite as she had planned for a home birth. Over the past 3 hours, she complains of feeling feverish and sweaty. Examination of the patient's abdomen reveals tenderness suprapubically. The symphysis-fundal height is 35 cm. She has a temperature of 38.3 C. The CTG shows a baseline fetal tachycardia of 170 beats/minute for the past 30 minutes. Her blood tests show:

Haemoglobin 105 g/L
White cell count 19 x 10^9/L
Platelets 250 x 10^9/L
CRP 219

What is the SINGLE most likely diagnosis?

A. **Endometritis**
B. **Chorioamnionitis**
C. **Septic miscarriage**
D. **Pyelonephritis**
E. **Threatened miscarriage**

ANSWER:
Chorioamnionitis

EXPLANATION:
Prolonged rupture of membranes (PROM) is a risk factor for chorioamnionitis. Although endometritis is a possibility, this is a more common complication in the postpartum period.

Q-119

A 33 year old lady presents with clear, watery discharge. On examination, a red ring is seen around the cervical os. The diagnosis of cervical ectropion is made. What is the SINGLE most accurate description to define cervical ectropion?:

A. **Replacement of stratified squamous epithelium thatnormally lines ectocervix by columnar epithelium**
B. **Replacement of columnar epithelium that normally lies ectocervix by stratified squamous epithelium**
C. **Columnar epithelium migrating from ectocervix to endocervix**
D. **Cuboidal cells being replaced by squamous epithelial cells**
E. **Non-keratinized stratified squamous epithelium being replaced by simple cuboidal epithelium**

ANSWER:
Replacement of stratified squamous epithelium thatnormally lines ectocervix by columnar epithelium

EXPLANATION:
Please see Q-94

Q-120

A 53 year old woman complains of dyspareunia and vaginal dryness. On a speculum examination, an atrophic vaginitis is seen. Her last menstrual period was oneyear ago. What is the SINGLE most appropriate management?

A. **Hormone replacement therapy**
B. **Combined oral contraceptive pills**
C. **Oestrogen cream**
D. **Testosterone gel**
E. **Primrose oil**

ANSWER:
Oestrogen cream

EXPLANATION:
Topical oestrogen is advisable as first-line for women with vaginal atrophy.

A vaginal oestrogen cream or pessary would be appropriate here since the patient only had symptoms of vaginal dryness without the other symptoms of menopause like hot flushes.

If she had vasomotor symptoms such as flushing, including sleep, mood disturbance and headaches, then a systemic hormone replacement therapy like the oestrogen plus progestogen patch would be a better pick.

Q-121

A 41 year old lady who is 37 weeks pregnant was brought to A&E. On arrival, she has a seizure. Her husband says a few hours ago she complainedof headache, visual disturbance and abdominal pain. What is the SINGLE most appropriate management?

A. 4 g MgSO4 in 100 ml 0.9% normal saline in 5 minutes
B. 2 g MgSO4 in 500 ml 0.9% normal saline in 1 hour
C. 4 g MgSO4 bolus intravenously
D. 2 g MgSO4 bolus intravenously
E. 10 mg diazepam in 500 ml 0.9% normal saline in 1 hour

ANSWER:
4 g MgSO4 in 100 ml 0.9% normal saline in 5 minutes

EXPLANATION:
Eclampsia
Eclampsia is defined as the occurrence of a tonic-clonic seizure in association with a diagnosis of pre-eclampsia.

Eclampsia is an obstetric emergency. Every hospital in the UK should have an eclampsia
protocol and eclampsia box with all the drugs for treatment.

Prevention and control of seizures:
- Magnesium sulfate should be considered when there is concern about the risk of eclampsia. It is used to prevent seizures as well as control it.
- To control a seizure, a loading dose of 4 g MgSO4 in 100 ml 0.9% normal saline is given by infusion pump over 5-10 minutes. This is followed by a further infusion of 1 g/hour maintained for 24 hours after the last seizure.
- Recurrent seizures should be treated with either a further bolus of 2 g of magnesium sulfate or an increase in the infusion rate to 1.5 g or 2.0 g/hour.

Q-122

A 31 year old woman who is 32 weeks pregnant attends the antenatal clinic. Her full blood count was taken when she was 28 weeks which results show a Hb of 10.7 g/dL, MCV = 91. What is the SINGLE most appropriate management?

A. **Folate supplement**
B. **Ferrous sulphate**
C. **Iron dextran**
D. **No treatment required**
E. **Hydroxycobalamin**

ANSWER:
No treatment required

EXPLANATION:
The values of anaemia differ in pregnancy as compared to a non-pregnant woman.

The British Committee for Standards in Haematology has defined anaemia inpregnancy as the following values
Hb levels of:
<11.0g/dl in the first trimester
<10.5 g/dl in the second and third trimesters
<10.0 g/dl in the postpartum period.

Since her Hb level is above 10.5g/dL, she does not need iron tablets.

This is one of the questions that differ in terms of how you answer in PLAB and how you would act in real life. While the British Committee of Standards in Haematology has given strict definitions of when to give iron tablets, in real life,many gynaecoloists would have prescribed iron tablets in this case. Again, it depends on hospital guidelines, but for the PLAB test, it is important to follow national guidelines.

Q-123

A 33 year old woman comes to the emergency department complaining of right sided abdominal pain for the last day. She vomited once earlier today. She gives a history of missing a period. A urine pregnancy test was found to be positive. A transvaginal ultrasound scan reveals an empty uterus. On examination, she is found to be tender at the right iliac fossa with no signs of peritonism. She is afebrile and observations are stable. What is the SINGLE most appropriate next step in management?

A. **Laparoscopy**
B. **Human chorionic gonadotropin (hCG) blood test**
C. **Repeat ultrasound in a week**
D. **Laparotomy**
E. **Culdocentesis**

ANSWER:
Human chorionic gonadotropin (hCG) blood test

EXPLANATION:
It is clear here that she has an ectopic pregnancy. The be more specific, this is a presentation of an unruptured ectopic pregnancy. The fact that there are no signs of peritonism, no shoulder tip pain or per vaginal bleeding and observations are normal means that a ruptured ectopic is unlikely.

As she is haemodynamically stable with severe right abdominal pain, a laparoscopic approach to the surgical management of tubal pregnancy is warranted however we would need to obtain a serum beta-hCG test first. With the results of the serum betahCG, we would be able to plan the next step in management. If the serum beta-hCG was less than 1500 IU/litre and patient is clinically stable with pain resolving, then we would prefer expectant management where we would just observe. The reason behind this, is that one cannot be sure of the diagnosis of an ectopic pregnancy when the serum beta-hCG is less then 1500 IU/litre as it could very well be an intrauterine pregnancy that is just too small to see on a scan at the moment. If a beta-hCG was more than 1500 IU/litre, we would expect to see a gestational sac in the uterus. Meaning if the beta-hCG was more than 1500 IU/litre and nothing can be found in the uterus on a transvaginal ultrasound, the diagnosis of an ectopic can be certain.

Laparotomy would be the choice if the patient is clearly haemodynamically unstable. The reason for this is laparotomy is quicker than a laparoscopy.

Culdocentesis was previously used to diagnose a ruptured ectopic pregnancy by the presence of free fluid in the pouch of Douglas. However, ultrasonography is noninvasive and has largely replaced culdocentesis where available.

Q-124

A 26 year old woman is now 21 days postpartum and would like contraception. She has a fear of needles and would like a contraception that is reversible as she wants to coceive again in 6 months. She is currently breast feeding. What is the SINGLE most appropriate contraception?

- **A. Progestogen only implants**
- **B. Depo-Provera**
- **C. Intrauterine system**
- **D. Combined oral contraceptive pill**
- **E. Progestogen only pill**

ANSWER:
Progestogen-only pill

EXPLANATION:
Intrauterine system and progestogen only implants are not suitable for use in this woman as she would like to become pregnant in 6 months.

She is afraid of needles, thus contraceptive injections such as the Depo-Provera injections are not suitable.

Combined oral contraceptives should not be used in any woman less than 6 weeks postpartum. In breast feeding woman, COCP is considered UKMEC 4 if less than 6 weeks postpartum and UKMEC 2 if between 6 weeks to 6 months postpartum. In a non breastfeeding woman, it is considered UKMEC 3 if less than 3 weeks postpartum and UKMEC 2 between 3 to 6 weeks postpartum.

For ease, just remember that the safest time to prescribe COCP postpartum is after 6 weeks for non breastfeeding mothers and after 6 months for breastfeeding mothers.

There is no evidence that progestogen only pills affect breast milk or infant growth and thus this can be started at any time. Ideally, we should delay starting POP until 21 days postpartum as there is no use starting it before as she would not require contraception during that time.

POSTPARTUM CONTRACEPTION

Menstrual periods usually return 5 to 6 weeks after birth if the mother is not breast feeding. If the mother is breastfeeding, the menstrual cycle usually return once the breastfeeding is less often. It is important to remember that, women can become pregnant BEFORE their periods return because ovulation occurs prior to menstrual bleeds.

For women who are not breastfeeding, it is reasonable to start using contraception from 3 weeks (21 days) after the birth.

Remember, no contraception is needed until 21 days postpartum

Summary of postpartum contraception

- Breastfeeding mothers – COCP after 6 months
- Non breastfeeding mothers – COCP after 6 weeks
- In both cases, during the period before they can start using COCP, they can use condoms or progesterone only preparations.
  - Women should be advised that although contraception is not required in the first 21 days after childbirth, POP can be safely initiated immediately
  - There is usually no need for any contraception use until day 21 postpartum as ovulation can only take place on day 28 and sperms can only survive 7 days
- IUS/IUCD unless fitted within 48 hours of birth, delay until after 28 days postpartum (delay until 28 days as if inserted before may risk uterine perforation)

Q-125

A 24 year old woman has a 5 month history of vaginal discharge, intermenstrual bleeding and post coital bleeding. She is sexually active and does not use any form of contraception. What is the SINGLE most appropriate investigation?

A. High vaginal swab
B. Endocervical swab
C. Cervical cytology
D. Pregnancy test
E. Pelvic ultrasound scan

ANSWER:
Endocervical swab

EXPLANATION:
The likely diagnosis here is cervicitis caused by either chlamydia or Neisseria gonorrhoeae. The endocervix is the principal site to be tested. Swabs of the endocervix can betaken during a speculum examination or indirectly by a vulvovaginal swab. These samples are suitable to be sent for nucleic acid amplification test (NAATs), cultures or microscopy.

A high vaginal swab (HVS) is only worthwhile where there are recurrent symptoms,treatment failure or in pregnancy, postpartum, post-abortion or post-instrumentation.

Cervical cytology is a useful tool to screen for cervical cancers however it is a screening tool for asymptomatic patients. There is no role for cervical smears for symptomatic patients. Furthermore, cervical screening in the UK starts at age 25. Cervical cancer is extremely rare under 25 years of age.

UNDERSTANDING GYNAE SWABS

	External skin	Vagina	EndoCervix	PID
Bacterial		BV TV (protozoa)	GC Chlamydia	GC Chlamydia
Fungal	Candida	Candida		
Viral	HPV HSV		HPV HSV	

BV-Bacterial Vaginosis
TV-Trichomonas Vaginalis
GC-Neisseria Gonorrhoeae (Gonococcus)
HPV-Human Papillomavirus
HSV-Herpes Simplex Virus

In general, vaginal infections (BV, TV, Candida) cause a lot of discharge compared with cervical infections (GC, Chlamydia)

Swabs
Three swabs ("triple swabs") are usually taken to screen for infection in symptomatic women.

Swab1 "High vaginal swab (HVS)	Stuart's Medium	Posterior Fornix	TV, BV ("heavy growth of anaerobes"), Candida & Group B Strep
Swab 2 "Endocervical swab (ECS)"	Stuart's Medium	Endocervix	GC
Swab 3 "Chlamydia"	Chlam swab	Endocervix (cells)	Chlamydia

Stuart's medium is basically agar and charcoal, and is a standard transport medium for most microbiological specimens.

Chlamydia can be identified by immunological techniques (eg. ELISA, ordirect Immunoflourosence), tissue culture or DNA amplification (PCR, etc). The swab used will depend on the method of identification used in each particular hospital. Swabs should be taken from the endocervix, and need to be taken in a particular way (usually rotated within the endocervix for 10 or 20 seconds) in order to obtain cells.

CERVICITIS (CHLAMYDIA AND NEISSERIA GONORRHOEAE) DIAGNOSIS

- Usually asymptomatic
- Can present with vaginal discharge, low abdominal pain, intermenstrual bleeding of postcoital bleeding

Diagnosis

- Endocervical or vulvovaginal swab with NAAT, culture or microscopy

In the UK, screening asymptomatic heterosexual patients for gonorrhoea involves using NAAT. A first pass urine is collected for males and a vulvovaginal swab (which may be self taken) are collected for females. If NAAT results show positive for gonorrhoea, a culture needs to be sent prior to starting antibiotics if possible. This is to test for susceptibility and resistant strains.

Diagnosis in detail

- Endocervical swab in transport medium (charcoal preferably) is to diagnose gonorrhoea
- Endocervical swab for a chlamydia nucleic acid amplification test (NAAT) is to diagnose chlamydia
- If examination is declined, a self-taken vulvovaginal swab for C. trachomatis and N. gonorrhoeae for NAAT may be an option and is more sensitive in women than urine testing.

Q-126

A 34 year old African woman has been trying to conceive for the past 2 years. She has suffered from heavy menstruations for the past 3 years and a recent transvaginal ultrasound shows two large submucosal fibroids and one intramural fibroid. Her partner has had a sperm analysis which was found to be normal. What is the SINGLE most appropriate management?

A. Endometrial ablation
B. Myomectomy
C. Uterine artery embolisation
D. Levonorgestrel intrauterine system
E. Gonadotropin-releasing hormone (GnRH) analogue

ANSWER:
Myomectomy

EXPLANATION:
This woman is trying to conceive. The only option to preserve fertility here is a myomectomy.
Endometrial ablation is a very good option to decrease menorrhagia however the procedure involves using electrical currents or heated water to destroy the endometrium which could result in infertility. This procedure is therefore NOT recommended for women who still want children. It is also important to note that endometrial ablation is not used in patients with large fibroids. It is primarily used in patients with heavy menstrual bleedings due to endometrial hyperplasia without fibroids, but it can also be used to treat small submucosal fibroids.

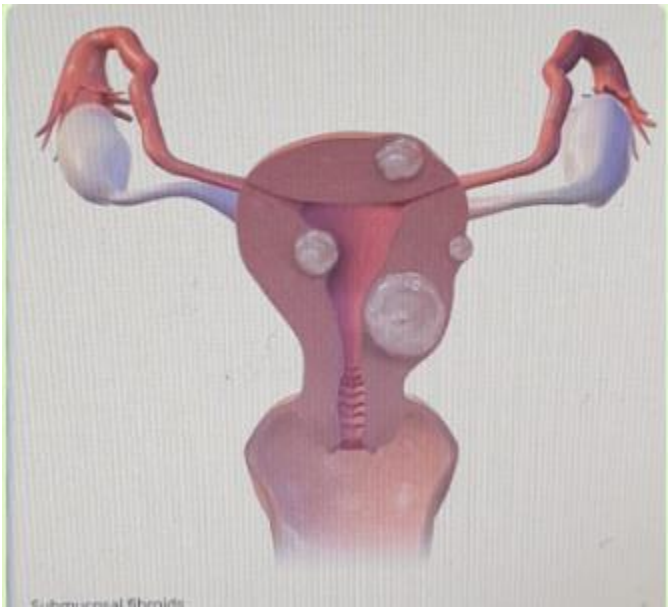
Uterine artery embolisation (UAE) is an alternative procedure to a hysterectomy or myomectomy for treating fibroids. It is performed by radiologist and involves embolizing the uterine arteries to shrink the fibroids. It is recommended for women with large fibroids however it is not recommended if the woman is trying to conceive as it reduces blood to the uterus significantly.

The levonorgestrel intrauterine system (LNG-IUS) is a small, plastic, t-shaped device placed in your uterus that slowly releases progestogen. It also acts as a contraceptive and thus should not be used for a woman trying to conceive.

GnRH analogues essentially shrink the fibroids however they would grow back once the medication is stopped. Its primary use is so that it is easier to remove the fibroids during surgery. As GnRH analogues inhibit ovulation, it would prevent pregnancy from occurring. This would be a suitable option given that it was combined with a myomectomy.

It is also important to note that if she does decide to go for a myomectomy, she would need to be counselled of the risk of uterine rupture in the future if she would become pregnant especially during labour. Her obstetrician would need to weigh the risk and benefits of a normal delivery and consider a caesarean section due to the risk of a uterine rupture.

FIBROID LOCATIONS



Submucosal fibroids
- Are located beneath the endometrium and bulge into the uterine cavity

Intramural fibroids
- Are located within the muscular uterine wall
- Most common type of fibroid

Subserosal fibroids
- Located on the external surface of the uterus and project to the outside of the uterus.

Q-127

A 27 year old woman has pre-eclampsia and was delivered by C-section. She is now complaining of right upper quadrant pain. What is the SINGLE most appropriate immediate investigation?

A. **Coagulation profile**
B. **Liver function test**
C. **Liver ultrasound**
D. **Magnetic Resonance Cholangiopancreatography**
E. **CT abdomen**

ANSWER:
Liver function test

EXPLANATION:
This lady has pre-eclampsia and now has RUQ pain. This could be a potential HELLP syndrome. Liver function test would help us with the diagnosis.

Q-128

An 11 week pregnant woman presents with severe persistent vomiting and nausea. She has been feeling nauseous for the past few days. A urinalysis shows 2+ ketones. She has a pulse rate of 100 beats/minute. What is the SINGLE most appropriate action?

A. **Ultrasound**
B. **Thiamine**
C. **Serum BHCG**
D. **Parenteral antiemetics**
E. **Intravenous fluids**

ANSWER:
Intravenous fluids

EXPLANATION:
This is a case of hyperemesis gravidarum. Intravenous fluids is the most important part of management to ensure that the patient is not dehydrated. As this has already been given and dehydration managed, intravenous antiemetics is the next best answer since only intramuscular cyclizine has been given. Regular antiemetics such as promethazine or cyclizine are often tried first in many early pregnancy units. If this fails, prochlorperazine intramuscularly or orally can be added on. If patient continues to vomit, intravenous metoclopramide or ondansetron can be used on top of the already prescribed regular antiemetics.

Advice such as eat little and often should be given.

Thiamine is also used in hyperemesis gravidarum and should ideally be given to all women admitted with prolonged vomiting. This is to prevent Wernicke's encephalopathy which is due to vitamin B1 (thiamine) deficiency. However, the importance of thiamine in an acutely vomiting woman is less compared to having intravenous antiemetics.

HYPEREMESIS GRAVIDARUM

Nausea and vomiting are common in early pregnancy. When it is severe or prolonged it is called hyperemesis gravidarum.

Symptoms usually begin between 6-8 weeks: peak at 12 weeks and usually resolve by 20 weeks.

Symptoms

- Nausea
- Vomiting
- Food and fluid intolerance
- Lethargy

Signs

- Ketonuria
- Weight loss > 5%
- Tachycardia
- Signs of dehydration:
  - Decreased skin turgor
  - Prolonged capillary refill
  - Sunken eyes

Management

- IV fluids
  - If potassium is found to be low i.e. < 3.5 mmol, sodium chloride 0.9% with 20-40 mmol/litre potassium chloride (KCl) is usually added
- Antiemetics
  - 1st line
    - Promethazine
    - Cyclizine
    - Prochlorperazine
    - Chlorpromazine
  - 2nd line
    - Metoclopramide
    - Ondansetron
- Corticosteroids (3rd line)

Q-129

A 22 year old pregnant woman is admitted at 37 weeks gestation with a blood pressure of 165/95 mmHg and symptoms of visual disturbances and epigastric pain. A few hours after administration of IV magnesium sulphate and IV labetalol, she develops a fit. What is the SINGLE most appropriate IV therapy to prevent further fits?

A. Hydralazine
B. Diazepam
C. Further bolus of Labetalol
D. Further bolus of Magnesium sulphate
E. Phenytoin

ANSWER:
Further bolus of Magnesium sulphate

EXPLANATION:
Please see Q-121

Q-130

A 23 year old woman who is 28 weeks pregnant presnts with vaginal bleeding. She has lost about 200 ml of blood vaginally. On examination, she has a soft abdomen, but has lower abdominal tenderness. A full blood count and a group and hold has been taken. Intravenous fluids has been started. Her observations are currently stable. What is the SINGLE most important investigations to establish a diagnosis?

A. **Ultrasound**
B. **Computed angiography**
C. **D-dimer test**
D. **Clotting profile**
E. **Kleihauer blood test**

ANSWER:
Ultrasound

EXPLANATION:
Antepartum haemorrhage is seen here. Two of the most common causes are placental abruption and placenta praevia. Other causes include local causes like bleeding from the vulva, vagina or cervix (cervical polyp or cervical carcinoma). It is not uncommon to fail to identify a cause for APH (over 30% of APH are of unknown origin)

The most important investigation is an ultrasound. This helps us rule out causes such as placenta praevia if the placenta is seen to be high. Usually, pregnant women would have had a scan at 20 weeks which would show the location of the placenta. Note that placenta praevia is usually painless bleeding.

Placenta abruption is a clinical diagnosis and should be considered if the pain is continuous. The abdominal pain usually has a sudden onset.

Vasa praevia would also be in the differential as it is another cause of painless bleeding vaginally.

Kleihauer is an important test to perform for any woman with a significant antepartum haemorrhage who is rhesus negative. It is a is a blood test used to measure the amount of fetal haemoglobin transferred from a fetus to a mother's bloodstream. Note however that this question is clearly asking about investigations that would lead to a diagnosis. Kleihauer test will give not provide any input for a differential. It is merely a test to determine the required dose of anti-D immunoglobulins to inhibit the formation of Rh antibodies in a Rh negative mother to prevent Rh disease in future pregnancies with a Rhesus positive fetus.

It is worth mentioning that if the question was asking for the SINGLE best action and a CTG was within one of the options, that would usually be the best action. The reason behind this is placenta abruption is part of the differential and if the CTG shows fetal distress, the baby would need to be delivered immediately. There is no time to wait around for an ultrasound. with a Rhesus positive fetus.

Q-131

A 35 year old female presents to the gynaecology clinic for investigations of infertility. She has menstrual cycle which she counted as being 35 days. She is on long term medications. She demonstrates enthusiasm about her job as a journalist and claims that she is experiencing no stress at home or at work. She drinks alcohol socially and smokes around 10 cigarettes a day. A blood sample was taken from the patient and her results are as follows:

Follicle-stimulating hormone (FSH) 5 U/L
Luteinizing hormone (LH) 3 U/L
Prolactin 300 mU/L
Oestradiol 800 pmol/L
21 day Progresterone 10 ng/dL

What is the SINGLE most likely reason for the results above?

A. **Polycystic ovary syndrome**
B. **Premature ovarian failure**
C. **Ovarian induction therapy**
D. **Progesterone levels taken on an inappropriate day**
E. **Recreational drug use**

ANSWER:
Progesterone levels taken on an inappropriate day

EXPLANATION:
Before you go any further, remember that progesterone should be taken 7 days prior to her menstrual bleed. This woman has a 35 day menstrual cycle. In order for her hormone levels to be accurately interpreted, we would need to take a blood sample from her on day 28 of her menstrual cycle. This is equivalent to day 21 of a standard 28 day menstrual cycle. To get the best day to measure progesterone levels you take (total length of the cycle) – 7 days. Example, in this patient it would be 35 (her total cycle length) – 7 days = 28. The progesterone levels are low because it is not taken on the appropriate day.

Premature ovarian failure would have persistently elevated FSH and LH levels

Polycystic ovary syndrome would usually have elevated levels of LH.

Q-132

A 66 year old woman had two episodes of post-coital vaginal bleeding in the last week. She has not had any withdrawal bleeds for more than 12 years. Her last cervical smear was 3 years ago which showed no abnormalities. What is the SINGLE most appropriate initial action?

A. **Repeat cervical smear**
B. **Topical oestrogen cream**
C. **Serum CA 125**
D. **Transvaginal ultrasound**
E. **Abdominal CT scan**

ANSWER:
Transvaginal ultrasound

EXPLANATION:
The idea here is to think of endometrial cancer. Any women who has postmenopausal bleeding should have a transvaginal ultrasound to determine the endometrial thickness. If the endometrium is thick, hysteroscopy with endometrial biopsy would be arranged.

The hormone replacement therapy in this scenario has no relevance as HRT (progesterone and oestrogen) is not a risk factor for endometrial cancer. Only unopposed oestrogen would be a risk factor for endometrial cancer.

A cervical smear is offered every 5 years in the UK if in the age group of 50 to 64 years old. Thus, having a cervical smear that was normal 3 years ago is a usual phenomenon. A repeat cervical smear is not necessary.

Q-133

A 33 year old 39 weeks pregnant nulliparous woman with a previous history of gestataional hypertension is in labour. Her membranes had ruptured earlier in the day. She was assessed by the midwife and her cervix was found to be soft, mid-position with an os 3 cm dilated. The fetus is in cephalic position. A vaginal examination was performed 4 hours later and the cervical os still remains at 3 cm dilated. Cardiotocography is reassuring and she is contracting less than three times in 10 minutes. What is the SINGLE most appropriate action?

A. **Repeat vaginal examination in 4 hours**
B. **Amniotomy**
C. **Caesarean section**
D. **External rotation**
E. **IV syntocinon drip**

ANSWER:
IV syntocinon drip

EXPLANATION:
There is obvious delay in the first stage of labour since there has been no cervical change over the last 4 hours. Amniotomy and oxytocin infusion and reassessment in 2 hours should always be considered in nulliparous women. Since her waters have already been broken. It would be appropriate to start oxytocin (syntocinon).

Some causes of poor progress in the 1st stage
• Inefficient uterine activity (power → commonest cause)
• Malposition, malpresentation, or large baby (passenger)
• Inadequate pelvis (passage)

Oxytocin will increase the frequency and strength of her contractions.

Q-134

A 23 year old woman has vaginal discharge and bleeding. An endocervical swab was taken which tested positive for Chlamydia. What is the SINGLE most appropriate antibiotic to give?

A. **Erythromycin 500 mg orally once a day for 5 days**
B. **Ceftriaxone 500 mg as a single intramuscular dose**
C. **Metronidazole 400 mg orally twice daily for 14 days**
D. **Azithromycyin 1 g for 7 days**
E. **Azithromycin 1 g single oral dose**

ANSWER:
Azithromycin 1 g single oral dose

EXPLANATION:
Please see Q-69

Q-135

A 39 year old woman presents to the GP surgery with concerns that she had no menstrual bleeds for the past 12 months. She used to have them on a regular basis. For the past few weeks she also has been experiencing hot flashes and night sweats. What is the SINGLE most appropriate test to perform?

A. **Follicle stimulating hormone**
B. **Progesterone**
C. **Prolactin**
D. **Luteinizing hormone**
E. **Oestradiol**

ANSWER:
Follicle stimulating hormone

EXPLANATION:
The woman needs to be investigated for premature ovarian failure. That is done by having two raised FSH levels taken 4 weeks apart

Q-136

A 38 year old female with lymphoma was treated with chemotherapy. She says she has been amenorrhoeic for the last 8 months. Lab results show:

Follicle-stimulating hormone (FSH) 60 IU/L
Luteinizing Hormone (LH) 77 IU/L
Prolactin 13 ng/mL
Oestradiol 26 pmol/L

An FSH was repeated 4 weeks later was still elevated.

What is the SINGLE most likely diagnosis?

A. **Menopause**
B. **Polycystic ovarian syndrome**
C. **Prolactinoma**
D. **Hypothyroidism**
E. **Premature ovarian failure**

ANSWER:
Premature ovarian failure

EXPLANATION:
The diagnosis of premature ovarian failure usually needs two raised levels of FSH (more than 40 IU/L) taken at least four weeks apart. In this question, since she is amenorrhoeic with raised FSH and LH and a normal prolactin level, the most likely diagnosis would be premature ovarian failure. Women with premature ovarian failure also have low estradiol (usually < 50 pmol/L)

Q-137

A 32 year old woman, primigravida and now 39 weeks gestation attends the antenatal day unit with sudden onset of epigastric pain associated with nausea and vomiting. On physical examination, there is right upper quadrant tenderness. Her temperature is 36.8 C, blood pressure is 165/95, heart rate 90 bpm and respiratory rate 19/min. Her blood tests show:

Haemoglobin 87 g/L
Platelets 90 x 109/L
Alanine transferase 219 U/L
Aspartate transaminase 180 U/L
Lactate dehydrogenase 720 U/L

What is the SINGLE most likely diagnosis?

A. **Acute fatty liver of pregnancy**
B. **Acute pyelonephritis**
C. **Cholecystitis**
D. **HELLP syndrome**
E. **Acute hepatitis**

ANSWER:
HELLP syndrome

EXPLANATION:
Increased LDH level suggest haemolysis. The decreased haemoglobin level, elevated liver enzymes and low platelets give rise to the diagnosis of HELLP syndrome. This is supported by the fact that she has a high BP and has epigastric pain that is associated with nausea and vomiting.

HELLP syndrome
This is a serious complication regarded by most as a variant of severe pre-eclampsia which manifests with haemolysis (H), elevated liver enzymes (EL), and low platelets (LP).

Liver enzymes usually increase and platelets decrease before haemolysis occurs. The syndrome is usually self-limiting, but permanent liver or renal damage may occur.

Note that eclampsia may co-exist.

Signs and Symptoms:
• Epigastric or RUQ pain and tenderness
• Nausea and vomiting
• Urine is 'tea-coloured' due to haemolysis.
• Increased BP and other features of pre-eclamsia

Management
• Delivery
• Supportive and as for eclampsia (magnesium sulfate ($MgSO_4$) is indicated)
• Although platelet levels may be very low, platelet infusions are only required if bleeding, or for surgery and <40

Q-138

A 42 year old African lady presents with bloading and heavy, regular periods. Her uterine size correlates to a 14 weeks pregnant uterus. What is the SINGLE most likely diagnosis?

A. Blood dyscrasia
B. Haematoma
C. Fibroids
D. Adenomyosis
E. Incomplete abortion

ANSWER:
Fibroids

EXPLANATION:
One must remember that uterine fibroids are more commonly found in Afro-Caribbean women. Menorrhagia and a uterus of 14 weeks size is highly suggestive of a fibroid. A transvaginal ultrasound scan should be performed to assess the fibroid.

Q-139

A 19 year old lady with primary amenorrhoea has the following blood results

Follicle stimulating hormone (FSH) 11 IU/L
Luteinizing hormone (LH) 15 IU/L
Prolactin 13 ng/mL
Oestradiol 50 pmol/L

What is the SINGLE most likely diagnosis?

A. Polycystic ovary syndrome
B. Premature ovarian failure
C. Absent uterus
D. Turner's syndrome
E. Absent ovaries

ANSWER:
Absent uterus

EXPLANATION:
A normal LH, FSH, oestradiol and prolactin rule outs polycystic ovary syndrome (PCOS). In PCOS there would be an increased LH, increased FSH, normal oestradiol. The LH:FSH ratio is usually 2:1 or 3:1.

In premature ovarian failure, LH and FSH is raised.

Turner syndrome and absent ovary would have bloods with a low estradiol, high FSH and LH.

Thus, the only answer possible here would be absent uterus.

Q-140

A 31 year old female presents to the infertility clinic with her husband. They have been trying to conceive for 3 years. Her BMI is 31 kg/m^2. She has dark pigmentation on her neck and severe acne on her face. There is also thinningof hair. Blood test reveals elevated insulin levels, elevated LH levels and moderately elevated testosterone levels. What is the SINGLE most appropriate diagnostic test to confirm the diagnosis?

A. CT abdomen
B. Ultrasound pelvis
C. Chest X-ray
D. MRI pituitary
E. Prolactin levels

ANSWER:
Ultrasound pelvis

EXPLANATION:
The most likely diagnosis here is Polycystic ovarian syndrome (PCOS). Elevated insulin levels, elevated LH levels and moderately elevated testosterone levels can be seen in PCOS. The scenario of acne on her face points towards an excess of androgens (Hirsutism, alopecia, acne are all manifestations of hyperandrogenism). And not to mention that her initial complaint was infertility which is one of the diagnostic criterion for PCOS.

The dark pigmentation on her neck is called acanthosis nigricans which is characterised by brown to black hyperpigmentation of the skin found in body folds,such as the axilla, nape of the neck, groin is a marker of insulin resistance

Ultrasound pelvis is the most appropriate as seeing 12 or more follicles on the ovaries can help make the diagnosis.

Q-141

A 31 year old woman complains of increased urinary frequency and urinary urgency. She also describes painful voiding. She complains of dyschezia, dysmenorrhooea, sacral backache with menses and deep dyspareunia which has been worsening over the last year. What is the SINGLE most likely diagnosis?

A. **Endometriosis**
B. **Uterine fibroid**
C. **Cystitis**
D. **Pyelonephritis**
E. **Transitional cell carcinoma of the bladder**

ANSWER:
Endometriosis

EXPLANATION:
This is a very uncommon presentation of endometriosis. Note that in some patients with endometriosis, along with the typical symptoms of endometriosis such as dysmenorrhoea and dyspareunia, they have increased urinary frequency, urgency and painful voiding.

Symptoms such as dysuria may be due to the involvement of bladder, peritoneum or invasion into the bladder. Sacral backache with menses are due to the growth and bleeding of the ectopic endometrium. These cyclic symptoms usually precede menses (24 to 48 hours) and continue throughout and after the flow.

Dyschezia refers to pain on defaecation. It is a symptom of endometriosis and is seen when there is endometriotic lesions in the Pouch of Douglas or in the recto-vaginal septum.

Q-142

A 38 year old woman has had no menstrual periods for the last 11 months. Prior to that, she had regular menstrual cycles. FSH was found raised (more than 40 IU/L) on two separate occasions a month apart. Her Thyroid-stimulating hormone (TSH) and prolactin are within normal limits. Her pregnancy test was negative. What is the SINGLE most likely diagnosis?

A. **Polycystic ovarian syndrome**
B. **Premature ovarian failure**
C. **Early menopause**
D. **Hypopituitarism**
E. **Addison's disease**

ANSWER:
Premature ovarian failure

EXPLANATION:
The blood results of increased levels of FSH on two separate occasions with prolonged amenorrhoea suggest premature ovarian failure.

Polycystic ovarian syndrome (PCOS) is incorrect as raised FSH makes PCOS unlikely. She also has no features of hyperandrogenism.

Early menopause is used for those women who go through their menopause between 40-45 years.

Q-143

A 42 year old pregnant woman at 38 weeks gestation has an eclamptic fit in the labour ward which has been ongoing and started 10 minutes ago. She had severe pre-eclampsia which was diagnosed when she was 35 weeks gestation. She was given a loading dose of magnesium sulphate several hours ago and is currently on a maintenance dose. When she was last examined, there was loss of patellar reflexes and she was feeling nauseous and warm. What is the SINGLE most appropriate next step?

A. A further bolus of 2 g magnesium sulphate
B. Increase infusion rate of magnesium sulphate
C. Intravenous hydralazine
D. Immediate delivery of baby
E. Administer diazepam

ANSWER:
Administer diazepam

EXPLANATION:
This lady is having a seizure but at the same time she is experiencing signs and symptoms of magnesium sulphate toxicity.

Magnesium sulphate toxicity is characterized by confusion, loss of reflexes (deep tendon reflexes), respiratory depression, and hypotension. In obstetric woman with magnesium sulphate toxicity, the following need to be performed:

If only loss of patellar reflex or respiratory rate less than 10 breaths/minute:
1. Stop magnesium sulphate maintenance infusion
2. Send magnesium sulphate levels to laboratory urgently
3. Consider administration of intravenous calcium gluconate 1 g (10 ml) over 10 minutes if there is concern over respiratory depression. *Calcium gluconate is the antidote*
4. Withhold further magnesium sulphate until patellar reflexes return or blood magnesium sulphate level known

If cardiorespiratory arrest (due to magnesium sulphate toxicity)
1. Crash call
2. Position woman in left lateral tilt position and initiate CPR
3. Stop magnesium sulphate maintenance infusion
4. Administer intravenous calcium gluconate 1 g (10 ml) over 10 minutes. *Calcium gluconate is the antidote*
5. Intubate immediately and manage with assisted ventilation until resumption of spontaneous respirations
6. Send magnesium sulphate levels to laboratory urgently

In general we do not use diazepam or phenytoin as an alternative to magnesium sulphate in women with eclampsia. However, since she is still having a fit, and magnesium sulphate toxicity is suspected, we are not able to use magnesium sulphate and thus diazepam would be the option here. Note however, we would only use it as a single dose, since prolonged use of diazepam is associated with an increase in maternal death.

If there were no features of magnesium sulphate toxicity in this question, recurrent seizures are treated with either a further bolus of 2 g magnesium sulphate or an increase in the infusion rate to 1.5 g or 2.0 g/hour.

The fetus should be continuously monitored with CTG. The woman in this stem is 38 weeks pregnant, and so plans for delivery should be made once stabilised but there is no particular hurry and a delay of several hours to make sure the correct care is in hand is acceptable assuming that there is no acute fetal concern such as a fetal bradycardia.

Q-144

A 39 year old woman has not had her period for 10 months. She feels well but is anxious as her mother had an early menopause. What is the SINGLE most appropriate initial investigation?

A. **Serum estradiol concentration**
B. **Serum FSH/LH**
C. **Serum progesterone concentration**
D. **Dual energy X-ray absorptiometry (DEXA)**
E. **Transvaginal ultrasound**

ANSWER:
Serum FSH/LH

EXPLANATION:
Serum FSH/LH would be useful. In actual fact, serum follicle-stimulating hormone (FSH) measurement alone can be used to diagnose premature ovarian failure.

Q-145

A 39 year old woman attends the GP surgery for advice on contraception. Her medical history includes hypertension which is well controlled with ramipril. She is a non-smoker and has had 2 vaginal deliveries in the past. Which of the following contraception methods is LEAST appropriate?

A. **Combined oral contraceptive pill**
B. **Progestogen-only pill**
C. **Intrauterine copper device**
D. **Mirena coil**
E. **Progestogen-only implant**

ANSWER:
Combined oral contraceptive pill

EXPLANATION:
There are few points worth remembering when it comes to questions on combined oral contraceptive pills.

Combined oral contraceptive pills are UNLIKELY to be the appropriate choice of contraception in the following scenarios in the exam.

- History of **V**TE or family history of VTE
- **M**igraine with aura

- **B**MI more than 30 kg/m^2
- **S**moker or ex-smoker
- History of **B**reast cancer
    - *It is alright to use COCP in patients with family history of breast cancer as long as the patient does not have a history of breast cancer and not a carrier of known gene mutations associated with breast cancer (e.g. BRCA1/BRCA2)*
- **H**ypertension (even if adequately controlled)

*Mnemonic: **V**itamins **M**ake **B**oys **S**leep **B**etter **H**ours*

Q-146

A 51 year old, nulliparous Professor comes to GP clinic with irregular heavy vaginal bleeding for the past 6 months. She complains of hot flushes and night sweats which began a few months ago. She feels tired most of the time and also having difficulty in sleeping. She states that her job is demanding and stressful at times. She has no significant past medical history. What is the SINGLE most appropriate initial investigation?

A. Hysteroscopy and endometrial biopsy
B. Transvaginal ultrasound scan
C. Serum follicle-stimulating hormone (FSH)
D. Serum estradiol
E. Serum progesterone

ANSWER:
Transvaginal ultrasound scan

EXPLANATION:
This patient may just be having signs and symptoms of perimenopause. If so, we could easily just do nothing and have no investigations performed. As this is not an option given, the next best option would be to arrange a transvaginal ultrasound scan.

Transvaginal ultrasounds are useful as an intiial investigation for irregular heavy vaginal bleeding even in the perimenopausal period with its primary use to look at endometrial thickness as a thick endometrium would prompt a referral for a hysteroscopy and endometrial biopsy to exclude endometrial cancer.

The reason we say that she is perimenopausal and not menopausal is because perimenopause includes the period beginningwith the first clinical, biological, and endocrinological features of the approaching menopause, such as vasomotor symptoms and menstrual irregularity whereas menopause is defined as 1 year of amenorrhoea after the age of 50 years old (alternatively 2 years of amenorrhoea after the age of 45).

Fibroids may also be a cause of irregular heavy bleeding, but at this age group, it has less of an impact as fibroids tend to decrease in size once reaching perimenopause and menopause. This is because of the decrease in oestrogen and progesterone which are hormones involved in stimulating growth of the fibroids.

The confusion that people have with this question is that they are looking for a test that is used to diagnose menopause. A key point worth remembering from NICE guidelines

in 2015 is that the diagnosis of menopause in healthy women above the age of 45 years should be based on sym-ptoms and menopausal pattern and thus we should NOT routinely check FSH. FSH levels tend to fluctuate in the perimenopausal period and so are unhelpful in diagnosing menopause in women above the age of 45.

When isFSH useful?
It is useful in the diagnosis of premature ovarian failure or early menopause (< 45 y). Two FSH levels would be required and they are taken 4 to 8 weeks apart. FSH also has its use in decisions regarding stopping contraception however it is unlikely to be raised.

Serum estradiol and progesterone is not helpful and it is not recommended by NICE in diagnosing menopause.

Key point to remember in this question:
A transvaginal ultrasound scan may be considered for woemn with atypical symptoms of menopause which would involve heavy irregular bleeding.

Q-147

A 68 year old nulliparous woman presents to her general practitioner with a six-month history of poorly-localised abdominal discomfort and a constant feeling of bloatedness. On pelvic examination you find a nontender, 7 cm solid, irregular, fixed left adnexal mass. Her last examination was 1 year ago, which was normal, and in included a normal Pap smear. What is the SINGLE most appropriate initial investigation?

A. CA-125
B. CA 15-3
C. CA 19-9
D. CEA
E. AFP

ANSWER:
CA-125

EXPLANATION:
This is a classic presentation of ovarian cancer

Concerns should be raised with any pelvic mass that is identified after menopause. Ovaries in the postmenopausal age group should be atrophic, and anytime they are enlarged, the suspicion of ovarian cancer arises.

The term “nulliparous” was thrown into the question to help guide you towards the suspicion of ovarian cancer as nulliparity is a risk factor.

In a woman of this age with persistent symptoms of abdominal discomfort and bloating it is essential to consider the possibility of ovarian cancer. Due to the nonspecific nature of symptoms of this disease, you should have a low threshold for initiating investigations. Serum CA125 is a tumour marker that is used in the investigation of possible ovarian cancer, though it is not 100% sensitive or specific for this disease.

NICE guidelines state that serum CA 125 should be performed if a woman - especially if aged 50 years old or over - has any of the following symptoms on a regular basis:
• abdominal distension or 'bloating'
• early satiety or loss of appetite
• pelvic or abdominal pain
• increased urinary urgency and/or frequency

Q-148

A 28 year old female has had 3 consecutive miscarriages. All her miscarriages happened before 10 weeks. Cytogenetic analysis performed on products of conception of the third miscarriage shows no abnormalities. She comes to clinic inquiring if it is safe for another pregnancy. What is the SINGLE most appropriate investigation to perform?

A. Atntiphospholipid antibodies
B. Parental peripheral blood karyotyping
C. Progesterone levels
D. Luteinizing hormone levels
E. Transvaginal ultrasound for cervical length

ANSWER:
Antiphospholipid antibodies

EXPLANATION:
All women with recurrent first-trimester miscarriage and all women with one or more second-trimester miscarriage should be screened before pregnancy for antiphospholipid antibodies.

Parental peripheral blood karyotyping of both partners should be performed in couples with recurrent miscarriage where testing of products of conception reports an unbalanced structural chromosomal abnormality. But in this case,cytogenetic analysis performed on products of conception shows no abnormalities thus the there is no need for parental karyotyping.

There is currently no satisfactory objective test that can identify women with cervical weakness in the non-pregnant state. Hence, the option for transvaginal ultrasound for cervical length is incorrect.

Q-149

A 37 year old woman has irregular menstrual cycles for the last 9 months accompanied by hot flashes and night sweats. She also complains of pain during sexual intercourse. What is the SINGLE most appropriate initial investigation?

A. Serum estradiol concentration
B. Serum FSH
C. Serum progesterone concentration
D. Dual-energy X-ray absorptiometry (DEXA)
E. Anti-Mullerian hormone

ANSWER:
Serum FSH

EXPLANATION:
Serum follicle-stimulating hormone (FSH) measurement alone can be used to diagnose premature ovarian failure

Note that Anti-Mullerian hormone can also be used to help diagnose premature ovarian failure as it is a measure of reduced ovarian reserve. However, it is usually only undertaken if there is diagnostic uncertainty.

Q-150

A 25 year old woman had an emergency lower segment Caesarean section after a prolonged labour 4 days ago due to fetal distress. She now complains of intermittent vaginal bleeding and foul smelling discharge. Her O2 saturation is 98% on air, blood pressure is 124/88 mmHg, pulse of 84 beats/minute and temperature of 37.9 C. The midwife tells you that the obstetric surgeons had difficulty in removing the placenta from the uterus in the operating theatre. What is the SINGLE most likely complication of this woman from the Caesarean section?

A. **Retained products of conception**
B. **Aspiration pneumonitis**
C. **Endometritis**
D. **Uterine rupture**
E. **Disseminated intravacular coagulation**

ANSWER:
Endometritis

EXPLANATION:
Although retained products of conception may be an option. Endometritis fits more perfectly with the scenario given the fever, the history of an emergency C-section, prolonged labour and the foul discharge.

Uterine infection (endometritis)
Is the most common cause of postpartum fever

Predisposing factors
• Emergency caesarean section
• Prelabour rupture of membranes
• Prolonged labour
• Multiple pelvic examinations.
• Internal fetal monitoring - use of scalp electrodes/ intrauterine

Signs and symptoms
• Fever usually in proportion to the extent of infection.
• Foul smelling, profuse, and bloody discharge.
• Tender bulky uterus on abdominal examination

Management
• Antibiotics

Q-151

A 33 year old woman with 3 previous normal vaginal deliveries is diagnosed with stress incontinence. She has tried pelvic floor exercises and lifestyle modifications but they have not been successful. Her BMI is 29. What is the SINGLE most appropriate management?

A. **Tension free vaginal tape**
B. **Bladder training**
C. **Oestrogen**
D. **Intermittent urethral catheters**
E. **Antimuscarinic medications**

ANSWER:
Tension free vaginal tape

EXPLANATION:
Stress incontinence is a leak of small amounts of urine when coughing or laughing. Usually with a history of many vaginal deliveries as this would weaken the pelvic floor muscles. The next management here would be surgical. A tension free vaginal tape would be appropriate.

The other options are less likely the correct answer:

Bladder training → is used for women with urgency or mixed urinary incontinence. It is not used for stress incontinence.

Oestrogens →Do not offer systemic hormone replacement therapy for the treatment of urinary incontinence

Intermittent urethral catheters → This is primarily for people with urinary retention rather than stress incontinence

Antimuscarinic medications → Are used to treat overactive bladder and not stress incontinence.

Q-152

A 29 year old woman has chronic cyclical pelvic pain, and dysmenorrhoea over the last 9 months in which she takes NSAIDs for. She complains of pain during sexual intercourse. A trial of combined oral contraceptive pills was given but there was no reported benefit. She denies any urinary or bowel symptoms. What is the SINGLE most definitive diagnostic test?

A. **Laparoscopy**
B. **CA 125**
C. **Ultrasound pelvis**
D. **Magnetic resonance imaging**
E. **Hysteroscopy**

ANSWER:
Laparoscopy

EXPLANATION:
The likely diagnosis here is endometriosis. A laparoscopy would is the gold standard to diagnosis it. A laparoscopy would also be able to identify any other pathologies that may be causing the chronic pelvic pain such as adhesions.

Serum CA125 may be seen elevated with endometriosis, however there is no evidence that it is a useful screening test for this endometriosis

Ultrasound pelvis may be helpful in detecting ovarian endometriosis but is unable to detect peritoneal disease. Remember, pelvic ultrasound scans are likely to be normal, but are still requested in some cases to help to diagnose an ovarian endometrioma (cyst) associated with endometriosis.

NICE clearly states that pelvic MRI should NOT be performed as a primary investigation to diagnose endometriosis. An MRI can be considered before operative laparoscopy in women with suspected deep endometrosis involving bowel, bladder or ureter which is not the case here.

A hysteroscope has no value in diagnosing endometriosis as the presence of endometrial-like tissue is outside of the uterine cavity.

Q-153

A 23 year old woman has had intermittent abdominal pain in the left iliac fossa for 6 weeks. Over the past 48 hours, she had had severe abdominal pain and fever of 39 C. Urine HCG is negatibve. She also has cervical motion tenderness. Pelvic ultrasound shows a 6.5 cm multilocular complex adnexal mass. Her WBC and CRP are raised. What is the SINGLE most likely diagnosis?

A. **Endometriosis**
B. **Dermoid cyst**
C. **Ovarian carcinoma**
D. **Ectopic pregnancy**
E. **Tubo-ovarian abscess**

ANSWER:
Tubo-ovarian abscess

EXPLANATION:
This question describes Tubo-ovarian abscess which is a complication of PID.

The ultrasound findings of a tubo-ovarian abscess usually show a multilocular complex adnexal mass with debris, septations, and irregular thick walls

Endometriosis → Does not present as a mass on US

Ovarian cancer → Unlikely as she is very young and she has signs of an infection

Ectopic pregnancy → Unlikely as urine BHC is negative and signs and symptoms point towards PID

Dermoid cyst → Typically an ovarian dermoid is seen as a cystic adnexal mass with some mural components. Most lesions are unilocular.

Q-154

A 52 yer old woman has hot flashes, night sweats and insomnia. She also complains of vaginal dryness and symptoms of urinary frequency. Her last menstrual period was 11 months ago. Her medical history includes having a myocardial infarction when she was 48 years old. What is the SINGLE most appropriate management for her?

A. **Raloxifene**
B. **Transdermal estradiol and progestogen patches**
C. **Combined oral contraceptive pills**
D. **Topical oestrogen**
E. **Clonidine**

ANSWER:
Transdermal estradiol and progestogen patches

EXPLANATION:
Hormone replacement therapy like oestrogen and progestogen patches are indicated here as she is having menopausal symptoms. This systemic treatment can also alleviate symptoms of vaginal dryness and symptoms of urinary frequency.

A vaginal oestrogen cream or pessary would be appropriate if the patient only had symptoms of vaginal dryness without the other symptoms of menopause like hot flushes. In such cases, there is no need for a systemic treatment as topical treatment can alleviate symptoms.

The history of a myocardial infarction is irrelevant. The relation between HRT and cardiovascular disease is controversial. The National Institute for Health and Care Excellence (NICE) states that HRT does not increase cardiovascular risk when started in women aged under 60 years and does not affect the risk of dying from cardiovascular disease and hence the presence of cardiovascular risk factors is NOT a contraindication to HRT.

Q-155

A 23 year old woman has vaginal discharge and bleeding. An endocervical swab was taken which tested positive for Neisseria gonorrhoeae. What is the SINGLE most appropriate management?

A. **Erythromycin 500 mg PO for 5 days**
B. **Ceftriaxone 500 mg as a single IM dose**
C. **Metronidazole 400 mg PO twice daily for 14 days**
D. **Azithromycin 1 g PO for 7 days**
E. **Azithromycin 1 g PO and ceftriaxone 500 mg IM stat**

ANSWER:
Azithromycin 1 g PO and ceftriaxome 500 mg IM stat

EXPLANATION:
Please see Q-69

Q-156

A 55 year old woman presents to the clinic with an itchy, tender white plaque on her vulva. The itch is especially worse at night and often disturbs her sleep. Her past medical history includes type 1 diabetes mellitus. She has no family history of cancer. What is the SINGLE most likely diagnosis?

A. Vaginal thrush
B. Vitiligo
C. Squamous cell carcinoma of the vulva
D. Lichen planus
E. Lichen sclerosus

ANSWER:
Lichen sclerosus

EXPLANATION:
Lichen sclerosus is a chronic inflammatory dermatosis which usually affects the skin of the anogenital region in women. It presents with general itching and is seen as white atrophic plaques. It occurs in little girls or middle-aged women.

It is thought to have an autoimmune mechanism in the pathogenesis.

The main complaint is itching which is worse at night. Dyspareunia and pain may be seen in cases of erosions or fissures.

Topical steroids are used as part of the management.

Follow-up is important and is recommended at three and six months, to ensure respoonse to treatment. This is because long standing, untreated cases show a 4% incidence of malignant change (association with development of squamous cell carcinoma of the vulva).

Q-157

A 27 year old lady presents with lower abdominal pain in the emergency department. 2 weeks ago, she came to the hospital with fever, suprapubic tenderness and vaginal discharge. Pelvic inflammatory disease (PID) was confirmed and she was sent home on oral doxycycline and oral metronidazole. She now presents with abdominal tenderness, temperature of 39.0 C, heart rate of 98 bpm and a blood pressure of 130/85 mmHg. What is the SINGLE most appropriate next course of action?

A. High vaginal swab
B. Endocervical swab
C. Pelvic ultrasound
D. Abdominal X-ray
E. Emergency laparoscopy

ANSWER:
Pelvic ultrasound

EXPLANATION:
The possible diagnosis here is a pelvic abscess or tubo-ovarian abscess which are complications of PID. A high vaginal swab or endocervical swab can take days to return with results. As this is a A&E case, an ultrasound would be more appropriate as this would lead to a diagnosis.

Ultrasound scan is the diagnostic imaging method of choice for acute pelvic pain in gynaecology. It can easily diagnose sequelae of PID (including pyosalpinx and tuboovarian abscess).

Laparoscopy would be the next step after finding a mass on ultrasound.

Abdominal X-ray has no part in the diagnosis of a pelvic abscess.

Q-158

A 30 year old multiparous woman has just delivered a term male baby. She is group A (-) and her husband's blood group is unknown. She does not remember having any intramuscular injections in her previous pregnancy. The infant boy develops severe jaundice within a few hours after being born. What is the SINGLE most likely diagnosis?

A. Hereditary spherocytosis
B. G6PD
C. ABO incompatibility
D. Rh incompatibility
E. Physiological jaundice

ANSWER:
Rh incompatibility

EXPLANATION:
The mother did not receive any Anti-D injections in her previous pregnancy. The stem is trying to tell you that she was isoimmunized during her last pregancy when delivered a Rhesus (+ve) baby. This women now has antibodies against fetal RBC. They attack fetal red blood cells causing a bilirubin build up leading to jaundice.

Other common causes of jaundice which present within 24 horus of birth are ABO incompatibilty, G6PD and sepsis. However, the stem does not provide any information which would point you to pick any of them.

Q-159

A 36 year old primigravida who is 32 weeks pregnant is brought in by ambulance because she is experiencing sudden constant abdominal pain which started 3 hours ago. She denies any blood loss vaginally. Her uterus is tender and hard. Fetal distress is seen on CTG. Her blood pressure is 100/70 mmHg. What is the SINGLE most likely diagnosis?

A. **Placental abruption**
B. **Placenta acrreta**
C. **Placenta praevia**
D. **Vasa praevia**
E. **Placenta percreta**

ANSWER:
Placental abruption

EXPLANATION:
Abruption of the placenta can still occur despite no evidence of vaginal bleeding. This type of abruption is called concealed abruption and it occurs in less than 20% of all placental abruptions.

Q-160

A 20 year old pregnant woman attends labour ward at 37 weeks of gestation with lower abdominal pain which started several hours ago with small amounts of bleeding. The abdominal pain is now settled and there is no uterine activity. On examination, the size of uterus is compatible with dates. What is the SINGLE most appropriate initial investigation?

A. **Coagulation profile**
B. **Ultrasound abdomen**
C. **Computed tomography scan of pelvis**
D. **Speculum examination**
E. **Kleihauer-Betke test**

ANSWER:
Ultrasound abdomen

EXPLANATION:
Although the clinical scenario here looks like placenta abruptio, one important diagnosis that we need to rule out as well is a placenta praevia for which initial the investigation of choice is an ultrasound. An ultrasound cannot exclude placental abruption, which is a clinical diagnosis.

Placenta praevia usually presents with a painless vaginal bleed however the abdominal pain in this stem could very well be mild contraction pains.

With every episode of bleeding, a rhesus-negative woman should have a Kleihauer test and be given prophylactic anti-D immunoglobulin however this is should not be done in an acute setting as the first investigation. A Kleihauer-Betke test can wait.

It is worth mentioning that if the question was asking for the SINGLE best action and a CTG was within one of the options, that would usually be the best action. The reason behind this is placenta abruption is part of the differential and if the CTG shows fetal distress, the baby would need to be delivered immediately. There is no time to wait around for an ultrasound.

Speculum examination is important to exclude a cervical cause of bleeding such as chlamydia but ideally this should be done after the ultrasound scan rules out placenta praevia.

Q-161

A 16 yeatr old girl has complaints of dysmenorrhoea, menorrhagia and irregular menstrual cycles. These complaints started a few years ago and has gotten worse with time. Her period pain is so intense that she occasionally has to skip school to stay at home. She has not tried any medication to manage her symptoms. She is not sexually active. What is the SINGLE most likely management to treat her symptoms?

A. **Tranexamic acid**
B. **Combined oral contraceptive pills**
C. **Endometrial ablation**
D. **Levonorgestrel intra-uterine system**
E. **Mefenamic acid**

ANSWER:
Combined oral contraceptive pills

EXPLANATION:
Combined oral contraceptive pills suppresses production of gonadotrophins and is thought to reduce menstrual blood loss by up to 50%. It can improve dysmenorrhoea, lighten periods, regulate the cycle, improve premenstrual symptoms, COCP is very useful in adolescence. Also note that tranexamic acid is also effective.

Although levonorgestrel intra-uterine system is first line for menorrhagia, it is difficult to fit in a nulliparous woman as her cervix has not yet been dilated before. However, there has been more and more research regarding the use of levonorgestrel intrauterine systems in nulliparous woman and some clinicians would prefer levonorgestrel intra-uterine system to combined oral contraceptives. Their argument is that the levonorgestrel intra-uterine systems such as Jaydess® may be fitted more easily, as the frame is smaller and narrower compared to the Mirena® IUS. In this situation, she is not sexually active so preference should go towards combined oral contraception to control the bleeding as a girl her age might feel uncomfortable with a speculum examination.

NSAIDS such as mefenamic acid may decrease menstrual blood loss by up to 20–30% and also significant decreases in dysmenorrhoea. But it will not regulate her periods whereas COCP will regulate an irregular cycle.

NICE have suggested that these medical management of heavy menstrual bleeding should be considered in the following order:
1. Levonorgestrel-releasing hormone
2. Tranexamic acid or non-steroidal anti-inflammatory drugs (NSAIDs) or combined oral contraceptives
3. Norethisterone (15 mg) daily from days 5 to 26 of the menstrual cycle, or infected long-acting progestogens.

There are certain situations where one might choose a different order.

The summary to answering these type of questions are as below:
- *Dysmenorrhoea in a young girl – **Mefenamic acid***

- *Dysmenorrhoea, menorrhagia, and irregular menstrual cycles in a young girl –* ***COCP***
- *Dysmenorrhoea, menorrhagia, and irregular menstrual cycles in sexually active women (or para 1 or more) –* ***Levonorgestrel intra-uterine system***

Q-162

A 23 year old pregnant woman is admitted at 38 weeks gestation with a history of an eclamptic fit at home. Her blood pressure is 155/90 mmHg. She is conscious and observations are stable. What is the SINGLE most appropriate IV therapy to prevent further list?

A. Clomethiazole
B. Diazepam
C. Labetalol
D. Magnesium sulphate
E. Phenytoin

ANSWER:
Magnesium sulphate

EXPLANATION:
Please see Q-121

Q-163

A 32 year old female with type 2 diabetes mellitus would like to know about vitamins and supplements in pregnancy. Which SINGLE most likely vitamin prevents teratogenic effects in an unborn child

A. Folic acid
B. Vitamin B12
C. Thiamine
D. Riboflavin
E. Pyridoxine

ANSWER:
Folic acid

EXPLANATION:
Advise women with diabetes who are planning to become pregnant to take folic acid (5 mg/day) until 12 weeks of getation to reduce the risk of having a baby with a neural tube defect.

Q-164

A 28 year old woman has been admitted at 38 weeks gestation. Her blood pressure is 190/120 mmHg and proteinuria is seen on urinalysis. Immediately following admission, she has a grand-mal seizure. What is the SINGLE most appropriate initial management?

A. **Diazepam intravenously**
B. **Fetal CTG**
C. **Hydralazine intravenously**
D. **Immediate delivery**
E. **Magnesium sulphate intravenously**

ANSWER:
Magnesium sulphate intravenously

EXPLANATION:
Intravenous magnesium sulphat3e is the most important initial management.

Fetal CTG is also needed, but MgSO4 comes first

Delivery should follow after stabilising mother.

Q-165

A 65 year old female patient diagnosed with breast cancer was given tamoxifen. Which SINGLE symptoms would be the most alarming?

A. **Fluid retention**
B. **Vaginal bleeding**
C. **Hot flushes**
D. **Headache and dizziness**
E. **Weight gain**

ANSWER:
Vaginal bleeding

EXPLANATION:
Tamoxifen is a risk factor for endometrial carcinoma. So vaginal bleeding will be of concern for us.

Q-166

A 39 year old female was on combined oral contraceptive pills which she stopped 9 months ago. She has not had her periods since then. Lab results show:

Follicle stimulating hormone (FSH) 55 U/L
Luteinizing Hormone (LH) 75 U/L
Prolactin 14 ng/mL
Oestradiol 30 pmol/L

What is the SINGLE most likely diagnosis?

A. **Hypothalamic amenorrhoea**
B. **Post pill amenorrhoea**
C. **Prolactinoma**
D. **Pregnancy**
E. **Premature ovarian failure**

ANSWER:
Premature ovarian failure

EXPLANATION:
The diagnosis of premature ovarian failure usually needs two raised levels of FSH (more than 40 IU/L) taken at least four weeks apart. In this question, since she is amenorrheic with raised FSH and LH and a normal prolactin level, the most likely diagnosis would be premature ovarian failure. Women with premature ovarian failure also have low estradiol (usually < 50 pmol/l).

Q-167

A 23 year old lady with a BMI of 30 kg/m^2 attends the GP surgery with complaints of facial hair growth and has a history of amenorrhoea for the past 6 months. Blood tests were requested and the results show:

Follicle-stimulating hormone (FSH) 22 IU/L
Luteinizing hormone (LH) 54 IU/L
Prolactin 60 ng/mL
Oestradiol 117 pmol/L
Progesterone 100 ng/dL

What is the SINGLE most likely diagnosis?

A. **Polycystic ovarian syndrome**
B. **Pregnancy**
C. **Cushing's disease**
D. **Congenital adrenal hyperplasia**
E. **Premature ovarian failure**

ANSWER:
Polycystic ovary syndrome

EXPLANATION:
Obese, amenorrhoea and hirsutism are consistent with Polycystic ovary syndrome (PCOS).

She has high LH, normal FSH and slightly high prolactin levels. These are not diagnostic for PCOS but among the choices given, the lab results reflect PCOS.

Serum LH levels are elevated in approximately 40% of women with PCOS, owing to increased production (increased amplitude and frequency of LH pulses)

Prolactin may be mildly elevated in PCOS. It has been described by some authors that women with polycystic ovary syndrome (PCOS) may have elevated levels of prolactin. However, a diagnostic criterion is to rule out other possible causes, including hyperprolactinemia. This is because high prolactin levels have many of the same symptoms as PCOS and needs to be ruled out to be certain of a PCOS diagnosis.

Q-168

A 35 year old lady at her 28th week gestation attends her antenatal clinic for a routine check-up. She feels well and has no complaints. Her blood pressure is 160/95 mmHg and her urine dipstick shows a 3+ protein. What is the SINGLE most likely diagnosis?

A. **Essential hypertension**
B. **Gestational hyper tension**
C. **Chronic hypertension**
D. **Pre-eclampsia**
E. **Chronic renal failure**

ANSWER:
Pre-eclampsia

EXPLANATION:
The definitiions for hypertensive disease in pregnancy are important. Pre-eclampsia is where a 20 weeks of gestation woman has a blood pressure more than 140/90 mmHG and proteinuria (> 0.3 g/24 hours)

Q-169

A 32 year old primigravida at 28 weeks gestation presents with a blood pressure of 152/105 mmHg. A second blood pressure reading was taken 10 minutes later which read 153/108 mmHg. She is asymptomatic and otherwise well. A urinalysis was negative for protein. She has no history of high blood pressure in the past. What is the SINGLE most likely management?

A. **Indapamide**
B. **Hydralazine**
C. **Labetalol**
D. **Losartan**
E. **Magnesium sulphate**

ANSWER:
Labetalol

EXPLANATION:
Labetalol is the most studied antihypertensive in pregnancy with the safest profile.

Pregnancy Induced Hypertension
The general management for gestational hypertension can be summarized below:

Degree of hypertension	**Mild hypertension (140/90 to 149/99 mmHg)**	**Moderate hypertension (150/100 to 159/109 mmHg)**	**Severe hypertension (160/110 mmHg or higher)**
Admit to hospital	No	No	Yes
Treat	No	With oral labetalol as first-line treatment to keep	With oral labetalol as first line treatment to keep:

		• Diastolic blood pressure between 80-100 mmHg • Systolic blood pressure less than 150 mmHg	• Diastolic blood pressure between 80-100 mmHg • Systolic blood pressure less than 150 mmHg

Alternatives that are commonly used in pregnancy are methyldopa and nifedipine

Labetalol	100 mg bd up to 600 mg qds	Avoid in asthma	Breastfeeding-OK
Methyldopa	250 mg bd up to 1 g tds		Breastfeeding-OK
Nifedipine	10 mg bd up to 30 mg tds		Breastfeeding-OK

Q-170

A 26 year old woman has been found to have mild dyskariosis on a routine cervical screening test. She is a heavy smoker. What is the SINGLE most appropriate next step in action?

A. Colposcopy
B. Repeat cervical smear in 4 months
C. Cone biopsy
D. Large loop excision of the transformation zone (LLETZ) procedure
E. Endocervical swab

ANSWER:
Colposcopy

EXPLANATION:
The first step is understanding that the screening result of mild dyskaryosis would follow samples being sent for HPV testing. If mild dyskaryosis is present but there is an absence of HPV testing, then this case should be referred to colposcopy. *This means that if HPV testing was part of the options, that would be a better answer compared to colposcopy.*

The second step is understanding what a colposcopy includes. A colposcopy involves visualising the cervix using a microscope. A speculum is used to open the vagina and the cervix is stained with acetic acid in the area of the transformation zone (TZ) to identify the site, grade and shape of any abnormal area of cells. Iodine is then gently applied to the rest of the cervix to identify the complete area of abnormality. A small biopsy is usually taken to be sent to the laboratory. When an area of abnormality extends into the cervical canal beyond the area that can be seen with the colposcope, a cone biopsy is indicated. We need a colposcopy first before we can be certain if a cone biopsy is required, hence the option for cone biopsy is incorrect.

Large loop excision of the transformation zone (LLETZ) takes place at the end of colposcopy if abnormality is obvious on colposcopy or for women who have had a positive biopsy result. Therefore if the option for colposcopy is present, that would take

priority over the option for LLETZ since the question is asking for “the next step in action”.

Endocervical swabs have no value in management of cervical screening test. Endocervical swabs are used to diagnose chlamydia or gonorrhoea.

SUMMARY OF MANAGEMENT OF CERVICAL SCREENING TEST RESULTS
Negative – Recall for screening as appropriate for a negative result

Inflammatory – Repeat cervical swab in 6 months, consider taking swabs for infection if severe inflammation

Inadequate – Repeat sample – If results still persistently inadequate, assess using colposcopy

Borderline – Perform HPV testing on these samples – If HPV positive, refer for colposcopy

Mild dyskaryosis – Perform HPV testing on these samples – If HPV positive, refer for colposcopy. *Note: If mild dyskaryosis and absence of HPV testing or HPV result unreliable or inadequate, refer for colposcopy*

Moderate dyskaryosis or Severe dyskaryosis – Refer for urgent colposcopy for suspected cancer (two-week wait)

Q-171

A 64 year old woman has been on hormone replacement therapy for 5 years. She had regular withdrawal bleeds until 3 years ago and has not had a bleeding since. Recently she noticed a brown vaginal discharge on her underpants. Her last cervical smear was 3 years ago which showed no abnormalities. What is the SINGLE most appropriate initial investigation?

A. Cervical smear
B. High vaginal swab
C. FSH and LH
D. Transvaginal ultrasound
E. Hysteroscopy and endometrial biopsy

ANSWER:
Transvaginal ultrasound

EXPLANATION:
The idea here is to think of endometrial cancer. Any women who has postmenopausal bleeding should have a transvaginal ultrasound to determine the endometrial thickness. If the endometrium is thick, hysteroscopy with endometrial biopsy would be arranged.

The hormone replacement therapy in this scenario has no relevance as HRT (progesterone and oestrogen) is not a risk factor for endometrial cancer. Only unopposed oestrogen would be a risk factor for endometrial cancer.

A cervical smear is offered every 5 years in the UK if in the age group of 50 to 64 years old. Thus, having a cervical smear that was normal 3 years ago is a usual phenomenon. A repeat cervical smear is not necessary.

Q-172

An 8 week pregnant woman presents with persistent nausea and vomiting and a history of weight loss. She has a pulseof 110 beats/minute. Her dehydration has been managed with sodium chloride 0.9% with added potassium chloride. She continues to vomit several times during the day despite being given intramuscular cyclizine. What is the SINGLE next most appropriate management?

A. **Intravenous Hartmann's solution**
B. **Intravenous antiemetics**
C. **Intravenous corticosteroids**
D. **Medical termination of her pregnancy**
E. **Oral thiamine**

ANSWER:
Intravenous antiemetics

EXPLANATION:
This is a case of hyperemesis gravidarum. Intravenous fluids is the most important part of management to ensure that the patient is not dehydrated. As this has already been given and dehydration managed, intravenous antiemetics is the next best answer since only intramuscular cyclizine has been given. Regular antiemetics such as promethazine or cyclizine are often tried first in many early pregnancy units. If this fails, prochlorperazine intramuscularly or orally can be added on. If patient continues to vomit, intravenous metoclopramide or ondansetron can be used on top of the already prescribed regular antiemetics.

Advice such as eat little and often should be given.

Thiamine is also used in hyperemesis gravidarum and should ideally be given to all women admitted with prolonged vomiting. This is to prevent Wernicke's encephalopathy which is due to vitamin B1 (thiamine) deficiency. However, the importance of thiamine in an acutely vomiting woman is less compared to having intravenous antiemetics.

Intravenous corticosteroids is NOT the answer here. Corticosteroids may be used for intractable cases of severe hyperemesis gravidarum in secondary care but this is usually a consultant decision and all other measures such as intravenous antiemetics have been taken to attempt to manage the patient's vomiting. The usual regimen of corticosteroids if needed would be hydrocortisone 100 mg BD intravenously for 48 hour followed by prednisolone 30 to 40 mg PO daily. Intravenous antiemetics would need to be attempted first before corticosteroids.

Q-173

A 45 year old waitress complains of pelvic pain which worsens pre-menstrually. The pelvic pain is usually worse when standing and has been present for the last one year. She also complains of post-coital ache that is felt deep within the vagina. There was no discharge on vaginal examination. A diagnostic laparoscopy was performed which did not show any abnormalities. What is the SINGLE most likely diagnosis?

A. **Pelvic inflammatory disease (PID)**
B. **Endometriosis**
C. **Pelvic congestion syndrome**
D. **Adenomyosis**
E. **Premature ovarian failure**

ANSWER:
Pelvic congestion syndrome

EXPLANATION:
Non-organic dyspareunia + with symptoms similar to premenstrual syndrome + aggravated by standing = Pelvic congestion syndrome

Q-174

A 37 year old woman presents with heavy vaginal bleeding for the past several months. A transvaginal ultrasound scan shows a 4 cm anterior subserosal fibroid and a 6 cm fundal intramural fibroid. She has been trying to conceive with her husband for the past year with no success and wants a management that would preserve her fertility. What is the SINGLE most appropriate management?

A. **Uterine artery embolisation**
B. **Endometrial ablation**
C. **Hysteroscopic myomectomy**
D. **Vaginal hysterectomy**
E. **Abdominal myomectomy**

ANSWER:
Abdominal myomectomy

EXPLANATION:
Abdominal myomectomy is the most appropriate in this situation. As the fibroids are seen to be subserosal and intramural, an abdominal incision would give us access to these fibroids. A vaginal approach using a hysteroscopy would be a choice for submucosal fibroids but not for intramural and subserosal fibroids.

Myomectomy and uterine artery embolization are both uterine sparing surgeries and can both preserve her fertiity but myomectomies are usually the better choice. If myomectomy has failed, uterine artery embolization may be attempted. Generally, women with fibroids causing infertility are offered myomectomies.

The other options given will affect the patient's fertility.

Q-175

A 29 year old woman experienced severe blood loss shortly after delivery of a stillborn vaginally, following a major placental abruption. Given the risk factors, what is the SINGLE most likely predisposing factor for developing postpartum haemorrhage in this woman?

A. **Retained product**
B. **Disseminated intravascular coagulation (DIC)**
C. **Fibroid uterus**
D. **Uterine infection**
E. **Large placental site**

ANSWER:
Disseminated intravascular coagulation (DIC)

EXPLANATION:
Although incidence of DIC as a cause of postpartum haemorrhage is low. This question is giving all the risk factors that would lead to disseminated intravascular coagulation (DIC)

With severe abruption, severe disseminated intravascular coagulation (DIC) may occur.

Fetal demise is also a risk factor for DIC resulting from release of tissue thromboplastin from deteriorating fetal organs.

Other causes of pregnancy related DIC are: eclampsia, retention of a dead fetus, amniotic fluid embolism, retained placenta or bacterial sepsis.

Q-176

A 28 week pregnant lady presents with painless vaginal bleeding after sexual intercourse. The cervical os is closed. On ultrasound, placenta is noted to be anterior and high. Fetal movements and fetal heart is seen on scan. Abdomen is soft and nontender. What is the SINGLE most likely diagnosis?

A. **Missed miscarriage**
B. **Disseminated intravasculaer coagulation**
C. **Placental abruption**
D. **Placenta praevia**
E. **Cervical ectropion**

ANSWER:
Cervical ectropion

EXPLANATION:
Post coital bleeding could be a symptom of either placenta praevia or cervical ectropion.

As the placenta is noted to be high, it is not placenta praevia.

Fetal heart was seen which excludes the diagnosis of missed miscarriage.

Placenta abruption would present a hard, tender abdomen.

There are no signs or symptoms of disseminated intravascular coagulation.

Cervical ectropion would be the most likely diagnosis.

Q-177

A 34 year old pregnant woman at 28 weeks gestation is seen in her antenatal appointment with a blood pressure of 165/120 mmHg. She was seen at her booking appointment at 10 weeks with a blood pressure of 110/80 mmHg. She feels well herself and has no complaints. A 24-hour protein was requested following a urinalysis which showed proteinuria. The 24-hour urine protein results show protein level of 0.2 g. What is the SINGLE most accurate diagnostic term for this patient?

A. **Chronic hypertension**
B. **Gestational hypertension**
C. **Pre-eclampsia**
D. **Severe pre-eclampsia**
E. **Chronic hypertension with superimposed pre-eclampsia**

ANSWER:
Gestational hypertension

EXPLANATION:
For a formal diagnosis of pre-eclampsia, one would need to have more than 0.3 g of protein in urine in a 24 hour urine sample.

Nowadays a 24-hour urine sample is rarely taken. Instead a urine protein to creatinine ratio (urine PCR) may be ordered on a random urine sample if there is evidence of significant proteinuria on a urinalysis. This urine protein to creatinine ratio is used to estimate the daily urine protein excretion. However, it is still important to rememebr that pre-eclampsia in the past was defiend as having new hypertension (140/90) presenting after 20 weeks with signficant proteinuria (> 0.3 g in 24 hours). As the protein in this stem is less than 0.3 g, this patient would be labeled as having gestational hypertension.

Gestational hypertension is new hypertension presenting after 20 weeks without significant proteinuria.

Q-178

An 18 year old female presents to her GP with the complaint of a vaginal discharge. She complains of the discharge being present for the past three weeks. When asked about her sexual history, she mentions that she is now in a new relationship. When prompted further, she also admits that she experiences post-coital bleeding. The patient has no significant past medical or gynaecological history. She is currently using the combined oral contraceptvie pill as a method of contraception. Her last menstrual period was two weeks days ago. On clinical examination, the vulva and the cervix appear to be red and inflamed. Examination of the pelvis elicited tenderness however an abdominal examination was normal. What is the SINGLE most likely diagnosis in this patient?

A. **Cervical ectropion**
B. **Cervical cancer**
C. **Chlamydia cervicitis**
D. **Endometrial polyp**
E. **Atrophic vaginitis**

ANSWER:
Chlamydia cervicitis

EXPLANATION:
The patient has symptoms of cervicitis. Cervicitis describes any infection, irritation or inflammation of the cervix and the most likely cause, in this case, is an infection with chlamydia – an infection seen in young women with new sexual partners.

Cervical ectropion usually does not cause any problems other than post-coital bleeding and most of them go away spontaneously without any medical intervention. If interventaion is required, it usually involves cauterising with silver nitrate.

Given her age, cervical cancer is unlikely.

Endometrial polyps tend to be asymptomatic however they can present with post-coital bleeding, intermenstrual bleeding, or menorrhagia. They do not cause vaginal discharge.

Q-179

A 30 year old woman visits her GP surgery with concerns of vaginal spotting. She has had a Mirena coil inserted for contraceptive use 6 weeks ago. Her last menstrual period was 2 weeks ago. She denies abdominal pain or abnormal vaginal discharge. Her last cervical smear was 2 years ago. A speculum examination reveals a healthy looking cervix with the Mirena coil threads visible. What is the SINGLE most appropriate action?

A. **Take an endocervical swab**
B. **Take a high vaginal swab**
C. **Repeat smear**
D. **Remove the Mirena coil**
E. **Reassure**

ANSWER:
Reassure

EXPLANATION:
Erratic bleeding is common after insertion of a Mirena coil. In the first 3 to 6 months, periods may be irregular and heavy at first. Spotting is common during this time period and reassurance is all that is required. By 1 year, most would have infrequent bleeding or amenorrhoea.

Q-180

A 53 year old woman complains of unbearable hot flushes and night sweats for the past month. She gives a history of having had a laparoscopically assisted vaginal hysterectomy 3 years ago. She smokes around 10 cigarettes a day for the past 20 years. What is the SINGLE most appropriate treatment for her symptoms?

A. Oestrogen-only hormone replacement therapy
B. Sequential hormone replacement therapy
C. Continuous combined hormone replacement therapy
D. Clonidine
E. Raloxifene

ANSWER:
Oestrogen-only hormone replacement therapy

EXPLANATION:
Women who need treatment for vasomotor symptoms postmenopausally should be given hormone replacement therapy (HRT) for up to 5 years after discussing the long-term benefits and risks. The rationale behind prescribing combined hormone replacement therapy for a woman who still has a uterus is to prevent endometrial hyperplasia which could lead to endometrial cancer if only an oestrogen preparation is used. As she has had a hysterectomy, an oestrogen-only hormone replacement therapy would be suitable as she is no longer at risk of endometrial cancer.

Smoking is not a contraindication for HRT use. A transdermal approach would be preferred here as smoking can reduce the efficancy of orally administered oestrogens. Transdermal HRT does not inctrease the risk of venous thromboembolism whereas an oral HRT is seen to increase venous thromboembolism by 2 to 3 folds. Since she is a smoker, it would be wise to prescribe a transdermal HRT instead of oral to reduce her risk of venous thromboembolism. A point to remember in case the question asks specifically for the preferred route of HRT administration.

Clonidine used to be popular for the treatment of vasomotor symptoms however it should not be used as first-line treatment of vasomotor symptoms as there is limited evidence of its efficacy and has many side effects.

To recap, there are three types of HRT used.

Oestrogen-only HRT
- Used on women who have a hysterectomy or an intrauterine system in situ

Sequential (cyclica) combined HRT
- Used in peri-menopausal women who are still menstruating or are within 12 months of their last period
- Sequential combined HRT is where oestrogen is taken every day, and progestogen is taken sequentially (usually for the last 14 days of menstrual cycle) to induce a bleed.
- Patients are often switched to continuous combined hormone replacement therapy after 12 months

Continuous combined HRT

- Used in menopausal women (i.e. women who have had their last period more than 12 months ago)
- As the name suggests, continuous combined HRT is where oestrogen and progestogen dose are taken daily