

1. In a lady with threatened abortion, which of the following would not be useful with intact membrane?

- (a) Antibiotic prophylaxis (b) Best rest
(c) Analgesics (d) HCG monitoring

EXPLANATION:

Ans. (a) i.e., Antibiotic prophylaxis.

(Ref. Williams Obstetrics 22nd/Chapter 9)

THREATENED ABORTION

The clinical diagnosis of threatened abortion is presumed when a bloody vaginal discharge or bleeding appears through a closed cervical os during the first half of pregnancy. Occurring commonly, vaginal spotting or heavier bleeding during early gestation may persist for days or weeks and may affect one out of four or five pregnant women. Overall, approximately half of these pregnancies will abort, although the risk is substantially lower if fetal cardiac activity can be documented (Tongsong and colleagues, 1995). Even without abortion, these fetuses are at increased risk for preterm delivery, low birth weight, and perinatal death (Batzofin, 1984; Funderburk, 1980; Weiss, 2004, and their colleagues). Importantly, the risk of a malformed infant does not appear to be increased.

Some bleeding near the time of expected menses may be physiological. Cervical lesions commonly bleed in early pregnancy, especially after intercourse. Polyps presenting at the external cervical os and decidual reaction in the cervix also tend to bleed in early gestation. Lower abdominal pain and persistent low backache do not accompany bleeding from these benign causes.

Bleeding usually begins first, and cramping abdominal pain follows a few hours to several days later. The pain of abortion may manifest as anterior and clearly rhythmic cramps; as a persistent low backache, associated with a feeling of pelvic pressure; or as a dull, midline, suprapubic discomfort. Whichever form the pain takes, the combination of bleeding and pain predicts a poor prognosis for pregnancy continuation.

Because ectopic pregnancy, ovarian torsion, and the other types of abortion may mimic threatened abortion, the threshold to examine women with vaginal bleeding and pain should be low. If the bleeding is persistent or heavy, a hematocrit should be obtained. If blood loss is sufficient to cause significant anemia or hypovolemia, uterine evacuation is done.

There are no effective therapies for threatened abortion. Bed rest, although often prescribed, does not alter the course of threatened abortion. Acetaminophen-based analgesia may be given to help relieve the pain.

2. Which of the following is the best to assess endometrial cycle?

- (a) Hormonal profile (b) Body temperature changes (c) Ferning test (d) Spinbarket pattern

EXPLANATION:

Ans. (a) i.e., Hormonal profile.

(Ref. Shaw 13th/80) The relative pattern of ovarian, uterine, and hormonal variation along the normal

menstrual cycle is typical:

- At the beginning of each monthly menstrual cycle, levels of gonadal steroids are low and have been decreasing since the end of the luteal phase of the previous cycle.
- With the demise of the corpus luteum, FSH levels begin to rise and a cohort of growing follicles is recruited. These follicles each secrete increasing levels of estrogen as they grow in the follicular phase. This, in turn, is the stimulus for uterine endometrial proliferation.
- Rising estrogen levels provide negative feedback on pituitary FSH secretion, which begins to wane by the midpoint of the follicular phase. Conversely, LH initially decrease in response to rising estradiol levels, but late in the follicular phase the LH level is increased dramatically (biphasic response).
- At the end of the follicular phase (just prior to ovulation), FSH-induced LH receptors are present on granulosa cells and, with LH stimulation, modulate the secretion of progesterone.
- After a sufficient degree of estrogenic stimulation, the pituitary LH surge is triggered, which is the proximate cause of ovulation that occurs 24 to 36 hours later.
- Ovulation heralds the transition to the luteal-secretory phase.
- The estrogen level decreases through the early luteal phase from just before ovulation until the midluteal phase, when it begins to rise again as a result of corpus luteum secretion.
- Progesterone levels rise precipitously after ovulation and can be used as a presumptive sign that ovulation has occurred.
- Both estrogen and progesterone levels remain elevated through the lifespan of the corpus luteum and then wane with its demise, thereby setting the stage for the next cycle.

4. A 18 year old patient presented with primary amenorrhea. On examination her breast and external genitalia are normal. She is most likely suffering from?

- (a) MKH syndrome
- (b) Turner's syndrome
- (c) Noonan syndrome (d) Androgen insensitivity

EXPLANATION:

Ans. (a) i.e., MKH syndrome.

(Ref. Harrison – Principles of Internal Medicine 16th ed., 177)

In **Mayer-Rokitansky-Kuster-Hauser syndrome** congenital absence of the uterus is usually associated with absent vagina. Presents with primary amenorrhoea, 46 XX karyotype and normal ovarian function and secondary sexual development. Differential diagnosis – androgen insensitivity syndrome.

Kallmann's syndrome is an X-linked disorder characterized by hypogonadotropic hypogonadism, which is associated with anosmia. This disorder more commonly affects men than women.

The **McCune-Albright syndrome** is characterized by patchy cutaneous hyperpigmentation, polyostotic fibrous dysplasia, and several endocrine disorders including toxic multinodular goiter.

Testicular feminization syndrome, now more appropriately called the complete androgen insensitivity syndrome, is a genetic disorder that makes XY fetuses insensitive to androgens (male hormones). Instead, they are born looking externally like normal girls. Internally, there is a short blind-pouch vagina and no uterus, fallopian tubes or ovaries. There are testes in the abdomen or the inguinal canal.

5. PCOD predisposes to the following except?

- (a) Increased risk of Ovarian cancer
- (b) Endometrial cancer
- (c) Insulin resistance
- (d) Osteoporosis

EXPLANATION:

Ans. (a) i.e., Increased risk of Ovarian cancer.

(Ref. H-17th/43; Shaw's Gynecology 13th ed. 353)

PCOD

- It is characterized by amenorrhoea or oligomenorrhoea, obesity, hirsutism and often infertility.
- **The classical Stein Leventhal triad:**
 - anovulation,
 - hyperandrogenism and – obesity.
- Both the ovaries are enlarged and covered with a thick, smooth fibrotic pearly white capsule.
- Long term complications are:
 - Hyperplasia of endometrium,
 - Cardiovascular disease and – NIDDM.
- **Lab:**
 - LH levels are raised,
 - LH/FSH ratio is high (3:1),
 - Estrogen may be high or normal, and – Androgens are increased – Progesterone is absent.
- **Rx:**
 - Clomiphene is drug of choice
 - Estrogen break through bleeding occurs when estrogen stimulation of the endometrium is continuous and is not interrupted by cyclic progesterone withdrawal, as can occur in polycystic ovarian disease (PCOD)
 - Those who desire pregnancy can be induced to ovulate with clomiphene citrate or GSH and LH (Pergonal), and folliculogenesis can be monitored by USG. For hirsutism in polycystic ovary syndrome, GnRH analogues can be tried.

8. Most important predictor of coronary artery disease–

- (a) VLDL
- (b) LDL
- (c) Chylomicron (d) HDL

EXPLANATION:

Ans. (d) i.e., HDL.

(Ref: Braunwald 8th/e p. 1008)

10. The agent of choice for controlling heparin induced bleeding is–

- (a) Protamine sulphate
- (b) Injectable vitamin K
- (c) Whole blood
- (d) Fresh frozen plasma

EXPLANATION:

Ans. (a) i.e., Protamine sulphate.

(Ref: Harrison's 17th/e p. 740)

16. Low calcium and high phosphate is seen in –

- (a) Hyperparathyroidism
- (b) Hypoparathyroidism
- (c) Hyperthyroidism (d) Hypothyroidism

EXPLANATION:

Ans. (a) i.e., Hyperparathyroidism.

(Ref: Harrison's 17th/e p. 2391)

17. The most effective contraceptive method recommended in lactating mothers is –

- (a) Barrier method
- (b) Progesterone only pill
- (c) Oral contraceptive pills (d) Lactational amenorrhea

EXPLANATION:

Ans. (b) i.e., Progesterone only pill.

[Ref :Jaffcoate's Principles of Gynaecology 7th/e p. 821, 822; Novak's Gynaecology 14th/e p. 254]

18. What is the drug of choice for emergency contraception?

- (a) Yuzpe regimen (combined oral pill)
- (b) High dose oestrogen alone
- (c) Levonorgestrel only pill
- (d) Danazol

EXPLANATION:

Ans. (c) i.e., Levonorgestrel only pill.

[Ref: Dutta 5th/e p. 472; Park 20th/e p. 430]

20. Feto-maternal transfusion is detected by–

- (a) Kleihauer test
- (b) Spectrophotometry

- (c) Benzidine test (d) Colorimetry

EXPLANATION:

Ans. (a) i.e., Kleihauer test.

[Ref: Dutta 6th/e p. 334]

24. Test for ovarian reserve—

- (a) LH
(b) LH/FSH ratio
(c) FSH
(d) Estradiol

EXPLANATION:

Ans. (c) i.e., FSH.

[Ref: Harrison 17th/e p. 2331]

26. In children, all are true except:

- (a) Thick Periostem
(b) Soft Bones
(c) Dislocations are rare
(d) Comminuted fractures are common

EXPLANATION:

Ans. (d) i.e., Comminuted fractures are common. Answer (d) is correct.

33. A 55 year old overweight female was given Fentanyl-pancuronium-midazolam anaesthesia for a surgery. After surgery she was extubated and on examination her chest wall respiratory motion was slow and she was unable to move her upper body. She was conscious and able to understand what was said, but was lacking respiratory effort. Her blood pressure was normal and heart rate was also normal. What is the diagnosis?

- (a) Pulmonary embolism
(b) Fentanyl induced chest wall rigidity
(c) Respiratory depression
(d) Recovery phase

EXPLANATION:

Ans. (b) i.e., Fentanyl induced chest wall rigidity

(Ref. Paul's anaesthesia 5th/364-366; 1347)

Although a prominent feature of fentanyl and its derivatives is their remarkable hemodynamic stability, Muscle rigidity is often seen on induction with **high-dose fentanyl and** its derivatives. When rigidity is intense, it may be difficult or impossible to ventilate the patient. Muscle rigidity seen with high doses of fentanyl increases with age and is accompanied by unconsciousness and apnea, but lower doses, 7 to 8 ig/kg, have produced chest wall rigidity without unconsciousness or apnea. Hypercarbia from fentanyl-induced respiratory depression may occur. Patients instructed to deep-breathe during fentanyl induction may experience less rigidity during induction of anesthesia.

Fentanyl produces approximately the same degree of ventilatory depression as equianalgesic doses of morphine. 40 Respiratory depression—expressed as an elevation in end-tidal CO₂, a decrease in the slope of the CO₂ response curve, or the minute ventilation at an end-tidal CO₂ of 50 mmHg (VE₅₀)—develops rapidly, reaching a peak in ~5 minutes, and the time course closely follows plasma fentanyl concentration. The magnitude of respiratory depression can be greatly increased when fentanyl is given in combination with another respiratory depressant such as midazolam.

40. Most common site of scaphoid fracture is:

- (a) Distal fragment
- (b) Tilting of the lunate
- (c) Waist
- (d) Proximal fragment

EXPLANATION:

Ans. (c) i.e., Waist.

Answer (c) is correct.

43. 'Hybrid' or 'Composite muscles' include the following except?

- (a) Pectinius
- (b) Flexor carpi ulnaris
- (c) Flexor digitorum superficialis
- (d) Biceps femoris

EXPLANATION:

Ans. (b) Flexor carpi ulnaris

In the lower extremity, hybrid muscles (innervation by two different nerves) includes:

- Pectinius
- Adductor magnus
- Biceps femoris

46. In severe exercise, CO increases up to 5 times, while pulmonary blood pressure rises minimally because?

- (a) Additional parallel vessels open up
- (b) Sympathetic stimulation causes greater distensibility of pulmonary vessels
- (c) Large amount of smooth muscles in pulmonary arterioles.
- (d) Larger area of pulmonary circulation

EXPLANATION:

Ans. (b) Sympathetic stimulation causes greater distensibility of pulmonary vessels

In the lower extremity, hybrid muscles (innervation by two different nerves) includes: (Ref.

Ganong 22nd ed. p)

PULMONARY CIRCULATION

Pulmonary Circulation is the circulation between right ventricle and left atrium. It has the following functions:

- Carriage of blood from right to left side of the heart.
- Exchange of gases between blood and alveolar air. The venous blood becomes oxygenated and some CO₂ is removed.
- Acts as a blood reservoir.

The pulmonary circulation is shorter than systemic circulation, as the pulmonary circulation time is about 5 sec only.

- The blood pressure is 25 mm Hg systolic & 10 mm Hg diastolic in pulmonary arteries, 10 mm Hg in pulmonary capillaries & 6 mm Hg in pulmonary veins.
- *The mean pulmonary blood pressure is 16 of the aortic pressure as the pulmonary peripheral resistance is low because of:*
 - a) Little amount of smooth muscles in pulmonary arterioles.
 - b) Short pulmonary capillaries and veins which are easily distensible

CHARACTERISTICS of the PULMONARY CIRCULATION

The pulmonary vascular blood pressure is 25 mm Hg systolic & 10 mm Hg diastolic in pulmonary arteries, 10 mm Hg in pulmonary capillaries & 6 mm Hg in pulmonary veins.

- The mean pulmonary blood pressure is 16 of the aortic pressure as the pulmonary peripheral resistance is low because of:
 - a) Little amount of smooth muscles in pulmonary arterioles.

b) Short pulmonary capillaries and veins which are easily distensible

- The blood flow in the pulmonary capillaries is rapid 0.75 second at rest.
- Both the capillary surface area and capillary permeability are great.
- The regional pulmonary blood flow is controlled by gravity (it is greater in the bases of the lungs) and O₂ tension (it is reduced in hypoxic areas).
- The alveoli are normally kept dry. This prevents pulmonary edema, and is due to rich lymph drainage and –ve pressure in the lung interstitial spaces.
- It has special reactions to gas changes. Hypoxia, hypercapnia and rise of H⁺ produce Vasoconstriction (and not Vasodilatation as they produce in other tissues).^Q

The large distensibility of the pulmonary vessels renders the pulmonary peripheral resistance to be considerably low (about 1/6 that of the systemic circulation). Accordingly, the pulmonary arterial B.P. is normally low (25/10 mm Hg).

Features	SYSTEMIC	PULMONARY
Structure of arteries and arterioles	Thicker walls, abundant smooth muscle	Thinner walls, less smooth muscle, large capacity
Structure of capillaries	Network structure	Very thin walls, mesh provides thin sheet of blood
Mean arterial BP	Higher—greater distance for blood to travel 120/80 normal	Lower 25/8 normal
Overall resistance to blood flow	Higher	

FACTORS AFFECTING PULMONARY B.P.

1. Respiratory Movements:

- **During Inspiration** P.B.P is, because **inspiration expansion of the lung dilatation of pulmonary vessels P.B.P.**
- **During expiration** P.B.P is, because **expiration recoil of the lung compression of pulmonary vessels P.B.P.**

2. Cardiac Output:

- The C.O.P. should increase 4 times normal before P.B.P. begins to rise. This is because the pulmonary vessels dilate and ↑ the capacity of pulmonary vessels dilate and ↑ the capacity of pulmonary circulation to accommodate the excess C.O.P.^Q
- The ↑ in C.O.P. without much – in P.B.P. is useful because it ↑ pulmonary gas exchange without over working the heart.

3. Capacity of pulmonary circulation:

- The ability of pulmonary circulation to change its capacity is very important in buffering excessive changes in P.B.P when excess blood is pumped is pumped to pulmonary vessels. These vessels dilate and their capacity ↑ without excessive ↑ without excessive ↑ in P.B.P.
- The ↑ in C.O.P. without much – in P.B.P. is useful because it ↑ pulmonary gas exchange without over working the heart.

4. Pulmonary peripheral vascular resistance = (PVR):

- Any increase in pulmonary peripheral resistance → much ↑ in P.B.P. as in left sided heart failure, mitral stenosis and emphysema. If the ↑ in P.B.P. is prolonged, the right ventricles hypertrophies and it may finally fail.

5. Nerve Supply:

- Sympathetic stimulation → constriction of pulmonary vessels → ↑ in P.B.P.
- Vagal stimulation → dilatation of pulmonary vessels → ↓ in P.B.P.

48. The hot fomentation relieves the intestinal spasm pain by inhibition of?

- Cholinergic receptors
- Adrenergic receptors
- Cold receptors
- Heat receptors

EXPLANATION:

Ans. (c) Cold receptors

(Ref. Ganong 22nd ed. /p507) **PHYSIOLOGY**

OF PAIN

- Skin has discrete cold-sensitive and heat-sensitive spots.
- There are 4 to 10 times as many cold-sensitive as heat-sensitive spots. The threshold for activation of **warmth receptors** is 30°C, and they increase their firing rate up to 46°C
- **Cold receptors** are inactive at temperatures of 40°C, but then steadily increase their firing rate as skin temperature falls to about 24°C. As skin temperature further decrease, the firing rate of cold receptors decreases until the temperature reaches 10°C. Below that temperature, they are inactive and the cold becomes an effective local anesthetic.

- Pain impulses are transmitted via lightly myelinated Ad and unmyelinated C fibers. ^Q
- **Cold receptors** are on dendritic endings of Ad fibers and C fibers, whereas **heat receptors** are on C fibers.
- Fast pain is mediated by Ad fibers and causes sharp, localized sensation. ^Q
- Slow pain is mediated by C fibers and causes a dull, intense, diffuse, and unpleasant feeling. ^Q
- Hyperalgesia is an exaggerated response to a noxious stimulus.
- Allodynia is a sensation of pain in response to an innocuous stimulus. ^Q
- Referred pain ^Q is pain that originates in a visceral organ but is sensed at a somatic site. It may be due to convergence of somatic and visceral nociceptive afferent fibers on the same second-order neurons in the spinal dorsal horn that project to the thalamus and then to the somatosensory cortex.

- The receptor for moderate cold is the **cold- and menthol-sensitive receptor 1 (CMR 1)**. Two types of vanilloid receptors ^Q respond to noxious heat (**VR1** and **VRL-1**).

50. Mechanisms of injuries caused by Lightning include the following except one?

- (a) Compression effect due to compression air wave striking the abdomen
- (b) Direct effect from electric discharges passing to ground
- (c) Surface flash burns from discharges
- (d) Mechanical effect due to force of displaced air around the flash by heat expansion

EXPLANATION:

Ans. (a) Compression effect due to compression air wave striking the abdomen

(Ref. Reddy FMT 29th/293)

Four factors are involved in causing damage to the body in lightning.

- (1) Direct effect from electric discharges passing to ground
- (2) Surface flash burns from discharges
- (3) Mechanical effect due to force of displaced air around the flash by heat expansion
- (4) Compression effect due to air movement in its return wave

57. Most common cause of sepsis in India within 2 months –

- (a) H influenza
- (b) E.coli
- (c) Coagulase positive staph aureus
- (d) Group B streptococcus

EXPLANATION:

Ans. (b) i.e., E.coli.

[Ref. Ghai 6th/e p. 161 & 7th/e p. 136; Care of the new born 6th/e, Meharban Singh]

New born sepsis can be classified into early onset sepsis-occurring within 72 hours and late onset sepsis occurring after 72 hours.

Early onset sepsis -

- It is caused by organisms prevalent in the genital tract or in the labor room and maternity operation theatre.
- In the west it is mostly caused by group B streptococcus and E.coli.
- In our country it is mostly due to gram negative organisms-E.coli, klebsiella and enterobactor sp.
- Majority of the neonates with early onset sepsis manifest as respiratory distress due to intrauterine pneumonia.

Late onset Septicemia :

- Late onset septicemia is acquired as nosocomial infection from the nursery or lying in ward.
- The onset is delayed for 48-72 hours after birth.
- In most cases symptoms appear by the end of first week or during second week of life.

- About two third cases of late onset septicemia are caused by gram negative bacilli, Klebsiella pneumoniae, enterobacteria, E.coli, pseudomonas aeruginosa, alkaligenes fecalis, salmonella typhimurium, proteus, citrobacter and serratia.

59. Infant of diabetic mother with weight 3.8 Kg presented with seizures after 16 hours of birth. What is the cause–

- (a) Hypoglycemia (b) Hypocalcemia
(c) Birth asphyxia (d) Intraventricular hemorrhage

EXPLANATION:

Ans. (a) i.e., Hypoglycemia

- Electrolyte disturbances, **including hypoglycemia and hypocalcemia**, are commonly seen in association with infants of diabetic mother and may result in early-onset seizures.
- Sorry friends, I could not find any reference which has directly mentioned that hypoglycemia is a more common cause of seizure than hypocalcemia in infants of diabetic mother. • I was just able to find following two statements :-
"Infants of diabetic mother are most at risk for hypoglycemia which can result in seizure". -Clinical Pediatrics
"Infant of diabetic mothers with seizure, that does not respond to glucose should have their serum calcium measured".
 -Cloherty
- From these two statements, it seems to me that hypoglycemia is a more common cause of seizures in infants of diabetic mother.

61. Drug of choice in Theophylline poisoning –

- (a) Cortisone (b) Propranolol (c) Thyroxine (d) Phenobarbitone

EXPLANATION:

Ans. (d) i.e., Phenobarbitone.

(Ref. Goodman & Gilman 11th/e p. -729)

Theophylline poisoning

- Theophylline has a narrow margin of safety.
- Dose dependent toxicity starts from the upper part of therapeutic concentration range.
- Adverse effects are primarily referable to the **GIT, CNS and CVS.**
- Children are more liable to develop CNS toxicity.
- **Treatment**
 - **prophylactic administration of diazepam in combination with phenytoin or phenobarbital.**
- Goodman & Gilman 11th/e - 729
 - Lidocaine may be used for ventricular arrhythmia.
 - Seizures refractory to anticonvulsant therapy, sometimes requiring general anaesthesia.

62. Which of the following drugs has been found to be useful in acute severe asthma?

- (a) Magnesium Sulphate
(b) Anti-leukotrine
(c) Cromolyn Sodium
(d) Cyclosporine

EXPLANATION:

Ans. (a) i.e., Magnesium Sulphate.

(Ref. Harrison 17th/e p. 1605)

Theophylline poisoning

- Magnesium sulphate by i.v. or inhalational route has been used for the treatment of acute severe asthma. All other drugs mentioned in the options are used for prophylaxis of asthma.

69. Tylectomy literally mean –

- (a) Excision of a lump (b) Excision of LN (c)
Excision of breast (d) Excision of skin

EXPLANATION:

Ans. (a) i.e., Excision of a lump
[Ref. S. Das 3/e, p 723]

75. Best prognosis for carcinoma of pancreas is in the region of –

- (a) Head (b) Tail (c) Body (d) Periapillary

EXPLANATION:

Ans. (d) i.e., Periapillary.
[Ref. Bailey & Love 24/e, p 1130]

– The earlier the symptoms arise d/t cancer, the earlier it can be diagnosed and hence better the prognosis. Thus prognosis in decreasing order is as follows.

Periapillary > head > body & tail

77. Parastomal hernia is most frequently seen with:

- (a) End Colostomy (b) Loop Colostomy (c) End
Iliostomy (d) Loop Iliostomy

EXPLANATION:

Ans. (b) i.e., Loop Colostomy.

[Ref. Campbell-Walsh Urology, 9th ed chapter80; Intestinal stomas: principles, techniques, and management By John M. MacKeigan, Peter A. Cataldo p318; Radiology of the postoperative GI tract By Bruce R. Javors, Ellen L. Wolf p367]

Parastomal hernias are more common in colostomies than ileostomies.

Loop colostomies have a higher predilection for prolapse than do end colostomies.

78. Best investigation to diagnose piles is –

- (a) Proctosigmoidoscopy (b) Barium enema (c)
Ultrasound (d) Proctoscopy

EXPLANATION:

Ans. (d) i.e., Proctoscopy.
[Ref. Bailey & Love 24th/e, p 1257 & 23rd/e, p. 1130-1131]

80. True about corneal transplant:

- (a) Eye ball is removed from the donor and the complete eyeball is preserved in ice for corneal transplant
(b) Cornea of persons more than 60 years of age is not taken for transplant
(c) Specular microscopy is ideal for the endothelial count
(d) HLA matching is required essentially

EXPLANATION:

Ans. (d) HLA matching is required essentially
(Ref. Kanski's ophthalmology 6th/312; Khurana Ophthalmology 4th/124–125)

Eye ball is removed from the donor and the Complete eyeball **may be** preserved in ice for corneal transplant.

Cornea of persons **more than 70 yrs of age is not** taken for transplant.

Specular microscopy is ideal for the endothelial count — *is single most correct sentence.*

HLA matching is **not required** essentially

86. Which of the following is NOT associated with increase in the risk of seizures in future in a child with febrile seizures?

- (a) Developmental delay (b) Early age of onset (c) Complex partial seizures
(d) Family history positive

EXPLANATION:

Ans. (b) Early age of onset

(Ref. OP Ghai 7th/528; Nelson Paediatrics 17th/1994)

	Febrile Seizures	Atypical Febrile Seizures
1	Febrile convulsions, is the <u>most common</u> seizure disorder during childhood generally having excellent prognosis.	Uncommon
2	Age between 9 month to 5 years.	Any age
3	Strong family history suggests genetic predisposition (chromosome 19p and 8q 13–21)	–
4	AD inheritance.	Long term risk recurrence is 9%
5	Generalized tonic clonic.	Focal seizures; Repeated within same day
6	Followed by brief post-ictal period of drowsiness. But bno postictal deficit	Focal deficit after seizures
7	–	Viral infection especially meningitis is <u>most common</u> cause.
8	Lasts for few seconds to 10 min.	Duration > 15 min.

TREATMENT

- Find the cause and treatment.
- Control the fever.
- Phenobarbital can be effective.
- Phenytoin and carbamazepine have no effect on febrile convulsions.
- Prolonged anticonvulsant therapy for prophylaxis no longer recommended.
- Oral diazepam is an effective and safe method of reducing the risk of recurrence of febrile seizures.

89. Which of the following is the best indicator of long term nutritional status –

- (a) Mid arm circumference (b) Height for age (c) Weight for age (d) Weight for height

EXPLANATION:

Ans. (b) i.e., Height for age.

[Ref. O.P. Ghai 6th/e p. 101 & 7th/e p. 62; Park 19th/e p. 434]

- Stunting (deficit in height for age) generally points towards a chronic course of malnutrition. — O.P. Ghai
“Height is a stable measurement of growth as opposed to body weight. Whereas weight reflects only the present health status of the child, height indicates the events in the past also”. — Park

92. Anti infective vitamin is –

- (a) Vitamin B₆ (b) Vitamin A (c) Vitamin D (d) Vitamin C

EXPLANATION:

Ans. (b) i.e., Vitamin A.

[Ref. O.P. Ghai 6th/e p. 120 & 7th/e p. 79; Park 19th/e p. 485] Functions

of Vit A

- Vitamin A is essential for – 1.
Normal vision
 - Retinol is necessary for functioning of retina.
 - Regeneration of rhodopsin during dark light is vit A dependent → vit A deficiency causes defective dark adaptation.
- 2. **Anti-infective**
 - Vitamin A is necessary integrity of epithelial tissues that resist invasion by pathogens.
 - Vitamin A has some role in immune response.
- 3. **Anticancer effect**
 - Beta-carotene has **antioxidant property** → by virtue of this action it reduces the incidence of lung, breast, oral, esophageal and bladder cancers.

4. Skeletal - growth

- Vitamin A supports skeletal growth.

96. Commonest cause of ureteric injury during surgical operation is –

- (a) Abdomino-perineal resection
- (b) Hysterectomy
- (c) Prostatectomy
- (d) Colectomy

EXPLANATION:

Ans. (b) i.e., Hysterectomy.

[Ref. Schwartz 8/e, p 1606; ASI, 1/e, p 793]

98. Semen analysis of a young man who presented with primary infertility revealed low volume, fructose negative ejaculate with azoospermia. Which of the following is the most useful imaging modality to evaluate the cause of his infertility?

- (a) Colour duplex ultrasonography of the scrotum
- (b) Transrectal ultrasonography
- (c) Retrograde urethrography (d) Spermatic venography

EXPLANATION:

Ans. (b) i.e., Transrectal ultrasonography.

[Ref. Smith's Urology 16/e, p. 685–703; Schwartz 8/e, p 1550, 1551]

- First lets briefly review the **anatomy of male internal genitalia**.
- Sperms are produced in **testes** and then *stored and mature* within the **epididymis**. **Vas deferens** carry the sperms from epididymis to the urethra where they open by separate openings into the prostatic urethra. Just before opening each vas deferens is joined by ducts of seminal vesicles. **Vas deferens and seminal vesicle ducts joint to form the ejaculatory duct.**
- The **Secretions of seminal vesicles** form a large part of seminal fluid and contain **fructose** and a *coagulating enzyme* called the *vesiculase*.
- Now coming to the question.
- **Semen analysis** forms a important part of infertility assessment.
- **Low ejaculatory volume** is caused by
 - *retrograde ejaculation into the bladder or*
 - *obstruction of the vas deferens or the ejaculatory duct*
- **Azoospermia** may be seen in
 - *testicular failure or*
 - *obstruction of vas deferens*
- **Absence of fructose** suggests
 - *seminal vesicles agenesis or obstruction.*
- A semen that is **low in volume** with **azoospermia** and **absence of fructose** suggests → either *obstruction of the ejaculatory ducts or congenital absence of the vas deferens and seminal vesicles.*
- The anatomy of the vas deferens & seminal vesicles can be investigated by **vasography** (*where contrast medium is injected into the vas deferens*) or **TRUS** (*Trans rectal ultrasonography*), however **TRUS is superior to vasography and is the investigation of choice.**
- **Also know**
- *Semen specimen should be obtained following at least 3 days of abstinence and examined within 1 to 2 hrs. At least 2 specimens are examined several weeks apart.*

102. Orthobaric oxygen is used in :-

- (a) CO poisoning (b) Ventilation failure
- (c) Anerobic infection (d) Gangrene

EXPLANATION:

Ans. (a) i.e., CO poisoning.

[Ref. CMDT 2005, p 1572; Harrison 15TH/e, p. 2606, 2495 & 14TH/e, p. 997]

- **Orthobaric Oxygen** – 100% oxygen at atmospheric pressure.
- Orthobaric oxygen is used in CO poisoning. It *reduce the half life of carboxyhemoglobin complex.*
- About use of hyperbaric oxygen in CO poisoning.
 - *Although hyperbaric oxygen therapy is often recommended for patients with coma, syncope, seizures, and cardiovascular instability, for those who do not respond to orthobaric oxygen therapy, recent data suggest that it is no more effective than orthobaric oxygen therapy* – [Harrison 15/e, p. 2660; CDMT 2005, p. 1572]

106. Insulin secretion is inhibited by?

- (a) Secretin
- (b) Epinephrine
- (c) GH
- (d) Gastrin

EXPLANATION:

Ans. (b) Epinephrine

(Ref. Ganong 23ed./Table 21–6) **REGULATION**

OF INSULIN SECRETION

- The normal concentration of insulin measured by radioimmunoassay in the peripheral venous plasma of fasting normal humans is 0–70 U/mL (0–502 pmol/L).
- The amount of insulin secreted in the basal state is about 1 U/h, with a fivefold to tenfold increase following ingestion of food. Therefore, the average amount secreted per day in a normal human is about 40 U (287 nmol).

FACTORS AFFECTING INSULIN SECRETION	
Stimulators	Inhibitors
Glucose	Somatostatin
Mannose	2-Deoxyglucose
Amino acids (leucine, arginine, others)	Mannoheptulose
Intestinal hormones (GIP, GLP-1 [7–36], gastrin, secretin, CCK; others?)	-Adrenergic stimulators (norepinephrine, epinephrine)
-Keto acids	-Adrenergic blockers (propranolol)
Acetylcholine	
Glucagon	Galanin
Cyclic AMP and various cAMP-generating substances	Diazoxide
	Thiazide diuretics
-Adrenergic stimulators	K ⁺ depletion
Theophylline	Phenytoin
Sulfonylureas	Alloxan Microtubule inhibitors Insulin

107. Effect of bradykinin includes?

- (a) Vasodilatation
- (b) Vasoconstriction
- (c) Increased vascular permeability
- (d) Pain

EXPLANATION:

Ans. (d) Pain

Bradykinin and pain

- **Chemically sensitive nociceptors** respond to various agents like bradykinin, histamine, high acidity, and environmental irritants.
- Tissue injury releases bradykinin and prostaglandins that sensitize or activate nociceptors, which in turn releases substance P and calcitonin gene-related peptide (CGRP).
- Substance P acts on mast cells to cause degranulation and release histamine, which activates nociceptors. Substance P causes plasma extravasation and CGRP dilates blood vessels; the resulting edema causes additional release of bradykinin. Serotonin (5-HT) is released from platelets and activates nociceptors.

110. Prenatal diagnosis of haemophilia can be done by?

- (a) Microarray
- (b) Cytogenetic analysis
- (c) Linkage analysis
- (d) DNA sequence polymorphism

EXPLANATION:

Ans. (b) Cytogenetic analysis

(Ref. Harper Biochemistry 27th; Human prenatal diagnosis -Page karen Filkins; OP Ghai 6th/327)

Four Methods of testing

- Cytogenetic testing: analysis of the number and shape of chromosomes
- Fluorescence in situ hybridization: protein analysis/chromosomal arrangements and study of protein markers
- Biochemical testing: protein and enzyme analysis of the blood
- Indirect/direct analysis of DNA strands (Carrier screening)

Genotype assessment based on direct identification of the pathogenic mutation in a chorionic villi sample obtained in the 11–12th gestational week is the most reliable method for prenatal diagnosis and should be used if available. Genetic linkage studies of polymorphisms should be the second choice in the assessment of carriers and in prenatal diagnosis. Carriers of haemophilia should be offered adequate psychosocial support before, during and after the prenatal diagnostic procedures.

112. BMR is increased in the following except:

- (a) Physical activity
- (b) Food intake
- (c) Hyperthyroidism
- (d) Obesity

EXPLANATION:

Ans. (a) Physical activity

(Ref. Harper Biochemistry 27th/464)

Body Mass Index (BMI)

Weight Classification by BMI

- Underweight: BMI < 18.5
- Healthy Weight: BMI 18.5 – 24.9
- Overweight: BMI 25.0 – 29.9
- Obesity: BMI > 30.0

Expenditure falls as weight is lost, due in part to loss of lean body mass and to decreased sympathetic nerve activity. When reduced to near-normal weight and maintained there for a while, (some) obese individuals have lower energy expenditure than (some) lean individuals. There is also a tendency for those who will develop obesity as infants or children to have lower resting energy expenditure rates than those who remain lean.

Educational point:

One newly described component of thermogenesis, called nonexercise activity thermogenesis (NEAT), has been linked to obesity. It is the thermogenesis that accompanies physical activities other than volitional exercise, such as the activities of daily living, fidgeting, spontaneous muscle contraction, and maintaining posture. NEAT accounts for about two-thirds of the increased daily energy expenditure induced by overfeeding. The wide variation in fat storage seen in overfed individuals is predicted by the degree to which NEAT is induced. The molecular basis for NEAT and its regulation is unknown.

113. BMR mainly depends on?

- (a) Daily activities (b) Lean body mass (c) Body surface area (d) Body Mass Index

EXPLANATION:

Ans. (b) Lean body mass

(Ref. Harper Biochemistry 27th;/ Personal Nutrition By Marie A. Boyle pg. 278; Guyton 11th/886) Body

Mass Index (BMI)

The BMR normally averages about 65 to 70 Calories per hour in an average 70 kilogram man. Although much of the BMR is accounted for by essential activities of the central nervous system, heart, kidneys, and other organs, the *variations* in BMR among different individuals are related mainly to differences in the amount of skeletal muscle and body size.

Skeletal muscle, even under resting conditions accounts for 20 to 30 per cent of the BMR. For this reason, BMR is usually corrected for differences in body size by expressing it as Calories per hour per square meter of body surface area, calculated from height and weight.

BMR is more closely predicted by lean body mass (total body mass fat).....Davidson medicine 20th/108.

FACTORS THAT INFLUENCE THE BASAL METABOLIC RATE

Factors that Increase BMR:

- **Caffeine**
- **Fever**
- **Growth (higher in children and pregnant women)**
- **Height (Higher in tall, thin people)**
- **Height Thyroid hormone**
- **Male gender (more lean tissue)**
- **Muscle mass (the more lean tissue, the higher the BMR)**
- **Smoking (Nicotine)**
- **Stress**

Factors That Decreases BMR:

- **Age (slows down with age)**
- **Low thyroid hormone**
- **Reduced energy intake (fasting, starvation, low-caloric diets)**
- **Sleep (BMR is lowest when sleeping)**

121. Cloudy swelling is due to –

- (a) Accumulation of water intracellularly (b) Fat accumulation intracellularly (c) Lysozyme degeneration (d) Glycogen accumulation intracellularly

EXPLANATION:

Ans. (a) i.e., Accumulation of water intracellularly.

[Ref. Read below]

- Cloudy swelling of a cell is degenerative change, in which the cells swell due to injury to the membrane affecting ionic transfer, causing the cytoplasm to appear cloudy and **water to accumulate** between the cells, with resultant swelling of the tissue.
- It is also called **abominoid degeneration, hydropic degeneration or parenchymatous degeneration.**

125. All are of adult size at birth except –

- (a) Mastoid antrum (b) Ear Ossicles
(c) Tympanic cavity (d) Maxillary antrum

EXPLANATION:

Ans. (d) i.e., Maxillary antrum.

[Ref. Gray's Anatomy 40th/e, p. 623; Dhingra 4th/e, p. 179]

126. Goblet cells are present in –

- (a) Trachea (b) Jejunum
(c) Epididymis (d) Ileum

EXPLANATION:

Ans. (a) i.e., Trachea.

[Ref. Gray's 38th/e, p. 1657]

- The trachea is lined by pseudostratified ciliated columnar epithelium with interspersed **Goblet cells** resting on a basement membrane.

131. In spinal anesthesia, the drug is deposited between –

- (a) Dura and arachnoid
(b) Pia and arachnoid (c) Dura and
vertebra (d) Into the cord substance

EXPLANATION:

Ans. (2) i.e., Pia and arachnoid.

[Ref. Snell's 8th/e p. 871; Ajay Yadav 3rd/e p. 123 2nd/e p. 121; Morgan 4th/e p. 293, 295]

132. Which among the following is NOT used for surface anaesthesia –

- (a) Lignocaine (b) Procaine (c)
Tetracaine (d) Benzocaine

EXPLANATION:

Ans. (3) i.e., Tetracaine

[Ref. KDT 6th/e p. 351]

133. Which is a hinge joint –

- (a) Knee (b) Elbow
(c) Metacarpo Phalangeal (d) Atlanto Axial

EXPLANATION:

Ans. (b) i.e., Elbow.

[Ref. B.D.C. vol. I, 4th/e, p. 147 & 3rd/e, p. 138]

144. Which valve is least affected in Rheumatic fever?

- (a) Pulmonary valve (b) Tricuspid valve
(c) Mitral valve (d) Aortic valve

EXPLANATION:

Ans. (a) i.e., Pulmonary valve.

[Ref. Robins 7th/e, p. 594]

In Rheumatic fever

Most commonly involved valve is → *Mitral valve*

Most commonly involved valve is → *Pulmonary valve*

Involvement of the valves in Rheumatic fever		
Mitral valve	→	60–70% cases
Mitral and Aortic	→	25% cases
Tricuspid valve	→	less common
Pulmonary valve	→	Rare

145. A patient presents with tachycardia, BP<100mm systolic and postural hypotension. Diagnosis is –

- (a) Vasovagal attack
- (b) Diabetic neuropathy
- (c) Shy drager syndrome
- (d) Bleeding peptic ulcer

EXPLANATION:

Ans. (d) i.e., Bleeding peptic ulcer.

- Under normal circumstances, upright posture causes **venous pooling** and a transient decrease in arterial pressure, resulting in unloading of baroreceptors.
- This leads to **reflex augmentation of sympathetic activity** and parasympathetic withdrawal resulting in peripheral arterial vasoconstriction, **venoconstriction** and an increase in **heart rate** and contractility.
- These adaptive mechanisms serve to maintain normal B.P.
- In certain conditions the adaptive mechanisms fail and there is a fall in B.P. resulting in postural hypotension.
- **In diabetic neuropathy** and **shy drager syndrome**, due to the presence of **autonomic neuropathy**, there is a lack of proper compensatory sympathetic response. Thus **bradycardia** and **decreased peripheral resistance** occurs instead of the compensatory tachycardia and increased peripheral resistance. Thus **hypotension** ensues.

Vasovagal attack (Also referred as *neuro cardiogenic syncope, or the vasodepressor syncope*).

- In this condition too, on assuming upright posture, **reflex bradycardia** and **vasodilatation** occurs resulting in low B.P.
- This disorder is considered to be an abnormality in the complex **neurocardio vascular interactions** responsible for maintaining systemic and cerebral perfusion.

Bleeding peptic ulcer

- Due to loss of blood the B.P. is decreased, resulting in reflex tachycardia.

So the answer is option 'd' because Bradycardia not tachycardia is a feature of all other conditions.

147. Calcium Gluconate is not used in CPR by –

- (a) Hypocalcemia
- (b) Hypokalemia
- (c) Hyperkalemia
- (d) Calcium antagonism

EXPLANATION:

Ans. (b) i.e., Hypokalemia.

[Ref. Harrison 17th/e, p. 1711–1712 & 16th/e, p. 1622]

148. A 28 year old woman having limited cutaneous scleroderma for the last 10 years complains of shortness of breath for last one month. Her pulmonary function tests (PFT) are as follow –

PFT	Observed	Predicted
FVC	2.63	2.82
FEV1	88%	80%
DLCO	5.26	16.3

What is most likely diagnosis in this case?

- (a) Interstitial lung disease
- (b) Pulmonary artery hypertension
- (c) Congestive heart failure
- (d) Bronchiectasis

EXPLANATION:

Ans. (a) i.e., Interstitial lung disease.

[Ref. Harrison 17th/e, p. 1587–1588 & 16th/e, p. 1499, 1500]

- This is a case of **restrictive** (interstitial) lung disease.
- **The hallmark of restrictive lung disease is reduced lung volume^Q.**
- **The restrictive lung diseases are characterized by reduced total lung capacity (TLC), vital capacity or resting lung volume.**

Before we move on to the question let us discuss some features of lung function test

Forced vital capacity (FVC)–

- In patients with restrictive lung diseases the FVC will be smaller because the amount of air that can be forcefully inhaled or exhaled from the lungs is smaller to start with.
- **Remember that lung is reduced in size in restrictive lung disease.**

Forced expiratory volume in one second (FEV₁)

- It is the amount of air that is forcefully exhaled in first second of the FVC test.
- In general it is common for the individual to be able to expell **75%-80%** of their vital capacity in the first second of the FVC test.
- **It is reduced in both obstructive and restrictive lung diseases, but in obstructive lung diseases the reduction is more in comparison to restrictive lung disease. What**

is FEV₁%???

- FEV₁ is also expressed as a ratio or percentage of the FVC and can be written as & FEV₁ rather than FEV₁/FVC.

Once again make it clear

“FEV₁ expressed as percentage (FEV₁%) is actually FEV₁/FVC.”

- **If the individual being tested displays a low FEV₁ and the FEV₁% is also low, then the clinician should suspect the presence of obstructive pathologies.**
- In patients with restrictive lung diseases
 - FVC → Low
 - FEV₁ → Is also low, (but there is less reduction in comparison to FVC).
- **Since both of these values may be equally affected in restrictive lung disease the %FEV₁ is normal or sometimes it is increased because the decrease in FEV₁ is less compared to decrease in FVC.**
- Hence when % FEV₁ is between 85%-100% of the normal and if both FEV₁ and FVC are low then you should suspect the patient of having restrictive lung disease. Note : **FEV₁ in a normal person is 75% –80%.**

Pulmonary function tests – A systematic Way to Interpretation

- There is a systematic way to read the PFT and be able to evaluate it for the presence of obstructive or restrictive disease. The following steps will be helpful.

Step 1.

Look at the forced vital capacity (FVC) to see if it is within normal limits.

Step 2.

Look at the forced expiratory volume in one second (FEV₁) and determine if it is within normal limits.

Step 3.

If both FVC and FEV₁ are normal, then you do not have to go any further – the patient has a normal PFT test.

Step 4.

If FVC and/or FEV₁ are low, then the presence of disease is highly likely.

Step 5.

If step 4 indicates that there is disease then you need to go to the FEV₁ % predicted for FEV₁/FVC.

– **If the % predicted for FEV₁/FVC is 88%–90% or higher, then the patient has a restricted lung disease^o.**

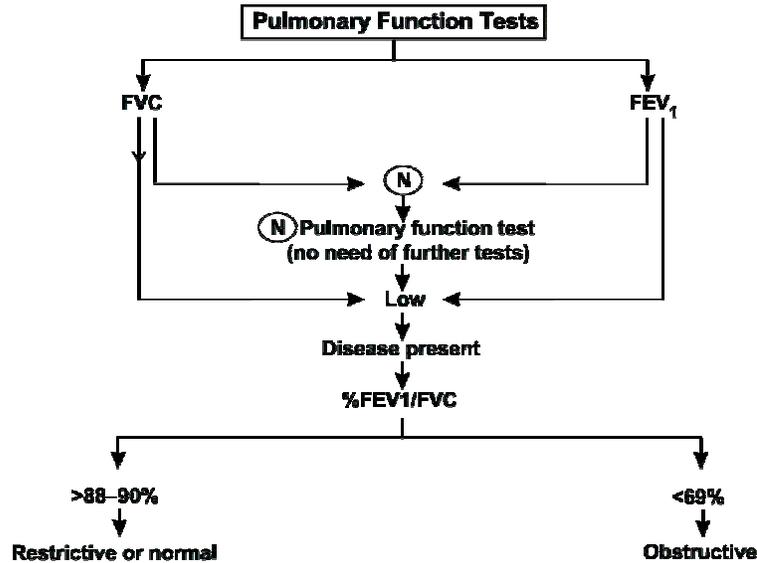
– **If the % predicted for FEV₁/FVC is 69% or lower, then the patient has an obstructed lung disease^o.** How Do you

Tell If the patient is normal or has mild, Moderate or severe pulmonary disease ???

There are a number of systems which physicians use to determine the severity of disease.

Here is just one way that is very commonly used -

- **Normal PFT outcomes** → > 85% of predicted values
- **Mild Disease** → > 65% but < 85% of predicted values
- **Moderate** → > 50% but < 65% of predicted values
- **Severe Disease** → < 50% of predicted values



DLCO

- *In interstitial lung diseases the transfer capacity of the lungs is reduced. The diffusing capacity of lung for carbon monoxide (DLCO) is reduced in all patients with intrinsic lung disorders^o.* • *In obstructive lung diseases the transfer capacity of the lung is not affected^o.*
- **But there is a catch** sometimes the DLCO is not affected in patients with restrictive lung disease.
- These patients have extraparenchymal restrictive lung disease i.e. the restrictive lung diseases caused due to chest wall muscular disorders.
- **A normal DLCO value in restrictive diseases excludes intrinsic lung disease and indicates extrinsic lung disorders due to chest wall, pleura or neuromuscular lung disease^o.**
- The DLCO is the most sensitive parameter and findings may be abnormal even when the lung volumes are preserved.

Coming back to the question

Interpretation of pulmonary function test of the patient

Pulmonary function test	Predicted	Observed	Interpretation	Inference
FVC	2.82	2.63	Decreased	Restrictive / Obstructive
FEV ₁ %	80%	88%	Increased	Restrictive
DLCO	16.3	5.26	Decreased	Restrictive / Pulmonary hypertension

In a patient with decreased FVC.

- Normal to Increased FEV₁% suggests → **Restrictive lung disease**
- Decreased FEV₁% suggests → **Obstructive lung disease**

Decreased DLCO

- Decreased DLCO are usually associated with restrictive lung disease.
- **But the rest of the findings confirms restrictive lung disease.**

151. MAO inhibitors should not be used with?

- Buprenorphine
- Pethidine
- Pentazocine
- Morphine

EXPLANATION:

Ans. (b) Pethidine

(Ref. KDT 6th/420)

TRANALCYPRIMINE

- It is a non-hydrazone monoamine oxidase inhibitor, and has a rapid onset of action.

- **Indications**
 - o Treatment of major depressive episodes, without melancholia.
 - o The major usage is in the treatment of treatment-resistant depression and anergic atypical depression.
 - o It also has some off-label uses, such as post-traumatic stress disorder.
- **Contraindications**
 - o Cerebrovascular defect
 - o Cardiovascular disease.
 - o Pheochromocytoma
 - o As tranylcypromine has a strong tendency to cause weight loss, it is not generally recommended for patients with a low BMI in an outpatient setting.
 - o Foods high in amine precursors or exogenous amines may cause reactions. The most common example of this, is the hypertensive crisis caused by tyramine, which is found in e.g. aged cheeses, cured meats, tofu and certain red wines.
 - o When ingested orally, MAOIs inhibit the catabolism of dietary amines. Sufficient intestinal MAO-A inhibition can lead to hypertensive crisis, when foods containing tyramine are consumed (so-called “cheese syndrome”), or hyperserotonemia if foods containing tryptophan are consumed. The amount required to cause a reaction exhibits great individual variation and depends on the degree of inhibition, which in turn depends on dosage and selectivity.

- **Drug interactions**

Sympathomimetics (e.g., pseudoephedrine in cold remedies)

- Risk of hypertensive crisis

Reserpine, guanethidine, tricyclic antidepressants

- Excitement
- Increase in blood pressure and body temperature

Levodopa

- Excitement
- Hypertension

Anticholinergics

- Risk of hallucination

Antihistamines, barbiturates, ethanol, opioids

- Action of these drugs prolonged-risk of respiratory depression

Pethidine (Demerol)

- Risk of high fever, sweating, excitement, delirium, convulsions, respiratory depression (MAO inhibitors retard metabolism of pethidine but not its demethylation, therefore excess norpethidine is formed) MDMA (Ecstasy)
- Risk of hypertensive crisis
- Serotonin syndrome

DXM (dextromethorphan)

- Serotonin syndrome

157. Characteristic feature of apoptosis?

- | | |
|--------------------------|------------------------------|
| (a) Cell membrane intact | (b) Cytoplasmic eosinophilia |
| (c) Nuclear moulding | (d) Cell swelling |

EXPLANATION:

Ans. (b) Cytoplasmic eosinophilia

(Ref. Robin's 7th/27)

In apoptosis, cell is reduced in size and contains brightly eosinophilic cytoplasm and a condensed nucleus.

MORPHOLOGY IN APOPTOSIS

- In H&E-stained tissue sections, apoptotic cells may appear as round or oval masses with *intensely eosinophilic cytoplasm*.
- Nuclei show various stages of ^o Chromatin condensation and aggregation and, ultimately, ^o karyorrhexis; at the molecular level this is reflected in fragmentation of DNA into nucleosome-sized pieces.
- The cells rapidly shrink, form cytoplasmic buds, and fragment into apoptotic bodies composed of membrane-bound vesicles of cytosol and organelles.
- Because these fragments are quickly extruded and phagocytosed without eliciting an inflammatory response, even substantial apoptosis may be histologically undetectable.

159. Bronchiectasis is most common in which lobe–

- | | | | |
|----------------------|-----------------------|---------------------|---------------------|
| (a) Right upper lobe | (b) Right middle lobe | (c) Left upper lobe | (d) Left lower lobe |
|----------------------|-----------------------|---------------------|---------------------|

EXPLANATION:

Ans. (d) i.e., Left lower lobe.

[Ref. API Medicine 6th/e, p. 236]

“Bronchiectasis commonly affects lower lobe bronchi, the left side^Q being affected more frequently than right”.

“Bilateral involvement of lower lobes occur most frequently vertical air passages of left lower lobe are more often involved than the right” Harshmohan 5th/e p. 393

- **“Bronchiectasis is a disease characterized by permanent dilatation of bronchi and bronchioles caused by destruction of the muscle and elastic tissue resulting from or associated with chronic necrotizing infection”.**

Etiology and pathogenesis –

The major factors in the pathogenesis of Bronchiectasis are

1) **Obstruction**

2) **Infection**

It is likely that both are necessary for the development of full fledged lesions, although either may come first.

Conditions associated with Bronchiectasis -

1) **Cystic Fibrosis^Q**

2) **Primary ciliary dyskinesia^Q**

3) **Allergic bronchopulmonary aspergillosis^Q**

170. Which of the following is not a Behaviour Therapy technique?

- | | |
|--------------------------|--------------------------------|
| (a) Flooding | (b) Counter-transference |
| (c) Counter-conditioning | (d) Systematic desensitisation |

EXPLANATION:

Ans. (2) Counter-transference.

(Ref. Kaplan & Sadock's synopsis of psychiatry- Page 59)

Behaviour Therapy:

– Therapies which are mainly based on the principles of classical and operant conditioning.

Counter-transference refers to the therapist's unconscious and conscious emotional feelings toward the patient. It is the therapist's thoughts and feelings directed towards the patient. The therapist uses how she feels to understand how the patient feels.

176. All of the following conditions are observed in Gout. except –

- | | |
|---|--|
| (a) Uric acid nephrolithiasis | (d) Renal disease involving interstitial tissues |
| (b) Deficiency of enzyme Xanthine oxidase | |
| (c) Increase in serum urate concentration | |

EXPLANATION:

Ans. (b) i.e., Deficiency of enzyme Xanthine oxidase.

[Ref. Harrison 17th/e, p. 2446 & 16th/e, p. 2310]

Renal complications of gout

- In the past progressive renal failure has been common in the gouty population with upto 25% of patients with gout dying of renal disease.

Gouty nephropathy or chronic urate nephropathy

- **This refers to deposition of monosodium urate crystal in the renal medullary interstitium^Q and renal tubules^Q (Distal and collecting tubule).**
- **Tubular obstruction by urate causes cortical atrophy and scarring and may also cause pyelonephritis due to urinary obstruction.**
- **Although chronic hyperuricemia is thought to be the cause of this urate nephropathy, this form of kidney disease is never seen in the absence of gouty arthritis^Q.**

Nephrolithiasis

- **This develops in 10-25% of patients with gout at some time during the disease course.**
- **The incidence of nephrolithiasis correlates with the serum urate level^Q but more strongly with the amount of uric acid excreted in the urine.**

- Most of this calculi are composed of **uric acid**; however, **calcium containing stones are 10 times** more common in patients with gout than in general population.

Also known, one more renal complication of hyperuricemia (not gout)

Acute uric acid nephropathy.

- **This type of nephropathy is particularly likely to develop in patients with leukemias and lymphomas who are undergoing chemotherapy.**
- *The drug increases the death of the tumours cells and uric acid is released as nuclei of these cells disintegrate.*
- *Uric acid crystals precipitates in the renal tubules particularly in the collecting ducts leading to the obstruction of nephrons and the development of acute renal failure.*
- **Xanthine oxidase is the enzyme needed for synthesis of uric acid from purines.**



Xanthine oxidase

- So a deficiency of xanthine oxidase would not result in gout, in fact xanthine oxidase inhibitor (Allopurinol) is used in the t/t of Gout.

Hyperuricemia and gout are frequently accompanied by – •

Obesity,

- *Alcoholism,*
- *Glucose intolerance related to insulin resistance and hyperlipidemia.*

177. Most common organism associated with reactive arthritis is –

- (a) Staphylococcus
- (b) Shigella
- (c) Chlamydia (d) Yersinia

EXPLANATION:

Ans. (c) i.e., Chlamydia.

[Ref. Harrison 17th/e, p. 2113; <http://www.emedicine.com/derm/TOPIC207.HTM>;

<http://www.emedicine.com/med/TOPIC1998.HTM>]

- **Reactive arthritis is a systemic disorder of unknown etiology that is defined by the development of conjunctivitis, urethritis, arthritis, and mucocutaneous lesions following an episode of infection elsewhere in the body.**
- *In 1916, Hans Reiter described the triad of nongonococcal urethritis, conjunctivitis, and arthritis in a young German officer with bloody dysentery. The classic triad of the disease, namely urethritis, arthritis, and conjunctivitis, is present in only one third of the patients. • Reactive arthritis is frequently associated with the human leukocyte antigen B27^Q (HLA-B27) haplotype.*
- *The etiology of reactive arthritis remains uncertain. The most accepted theory about the pathophysiology of reactive arthritis involves initial activation by a microbial antigen, followed by an autoimmune reaction that involves the skin, eyes, and joints.*
- **Two forms are recognized: a sexually transmitted form and a dysenteric form. Gastrointestinal infections with Shigella, Salmonella, and Campylobacter species and other microorganisms, and genitourinary infections especially with Chlamydia trachomatis have been found to trigger reactive arthritis.**
- *Young children tend to have the post dysenteric form, whereas adolescents and young men are most likely to acquire reactive arthritis after they have urethritis.*
- *It's not clear which organism is most commonly associated with reactive arthritis. Both Shigella and Chlamydia appear to be most common. After going through many articles from journals on the net, Chlamydia appears to be the most common. We would prefer to go with Chlamydia. (However if any one finds a reliable reference documenting the most common organism, please mail us at our email id.)*
- **The following article** "Frequency of triggering bacteria in patients with reactive arthritis and undifferentiated oligoarthritis and the relative importance of the tests used for diagnosis" in Ann Rheum Dis. 2001 April; 60(4): 337–343 at the following website-<http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1753604> writes its conclusion as:
"CONCLUSIONS—Chlamydia trachomatis, yersinia, and salmonella can be identified as the causative pathogen in about 50% of patients with probable or possible ReA if the appropriate tests are used."

178. All of the following are true about Raynaud's disease except –

- (a) More common in females
- (b) Positive antinuclear antibodies
- (c) Most common cause of raynaud's phenomenon
- (d) Has good prognosis

EXPLANATION:

Ans. (b) i.e., Positive antinuclear antibodies.

[Ref. Harrison 16th/e, p. 1489, 1490] Raynaud's phenomenon –

- It is characterized by episodic **digital ischemia** manifested clinically by the sequential development of digital blanching, cyanosis and rubor of the fingers or toes following **cold exposure** and **subsequent rewarming**.
- The color changes are confined to the toes and fingers.
- Typically one or more digits will appear white when the patient is exposed to a cold environment or touches a cold object. This blanching or pallor represents the **ischemic phase** of the phenomenon and results from **vasospasm** of digital arteries.
- During the ischemic phase capillaries and venules **dilate** and **cyanosis** results from the **deoxygenated blood** that is present in these vessels.
- With **rewarming** the digital vasospasm resolves and blood flow into the dilated arterioles and capillaries **increases** dramatically. This "**reactive hypermia**" imparts bright red colour to the digits.

Pathophysiology –

- Raynaud's phenomenon is secondary to **exaggerated reflex sympathetic vasoconstriction**^Q. This theory is supported by the fact that α adrenergic blocking drugs as well as sympathectomy decrease the frequency and severity of Raynaud's phenomenon.

Raynaud's phenomenon is broadly separated into two categories

- i) **Primary or idiopathic Raynaud's phenomenon : Raynaud's disease** ii)

Secondary Raynaud's phenomenon

Raynaud's disease

- ***This term is applied when the secondary causes of Raynaud's phenomenon have been excluded***^Q.
- Over **50%** of patients with Raynaud's phenomenon have Raynaud's disease.
- Women are affected about **five times** more often than men and the age of presentation is usually between 20–40 yrs.
- ***Fingers and toes are commonly involved***^Q.
- Physical examination is often entirely normal, the radial, ulnar and pedal pulses are normal.
- The fingers and toes may be cool between attacks and may perspire excessively.
- Thickening and tightening of the digital subcutaneous tissue (**sclerodactyly**) develops in 10% of patients.

Prognosis of Raynaud's disease

- In general patients with Raynaud's disease appear to have the **milder forms of Raynaud's phenomenon** (Fewer than 1% of the patient lose a part of the digit).
- After the diagnosis is made the disease **improves spontaneously** in approximately **15%** of patients and progresses in about 30%.

Now,

CAUSES OF SECONDARY RAYNAUD'S PHENOMENON

<p>Collagen vascular disease</p> <ul style="list-style-type: none"> Scleroderma Systemic lupus erythematosus Rheumatoid Arthritis Dermatomyositis Polymyositis 	<p>Blood dyscrasias</p> <ul style="list-style-type: none"> Cold agglutinins Cryoglobulinemia Cryofibrinogenemia Myeloproliferative disorder Waldenstrom's macroglobulinemia
<p>Arterial occlusive disease</p> <ul style="list-style-type: none"> Atherosclerosis of the extremities Thromboangitis obliterans Acute arterial occlusion Thoracic outlet syndrome Pulmonary hypertension Neurological disorder Intervertebral disc disease Syringomyelia Spinal cord tumours Stroke, poliomyelitis 	<p>Trauma</p> <ul style="list-style-type: none"> Vibration injury Hammer hand syndrome Electric shock Cold injury Typing Piano playing <p>Drugs</p> <ul style="list-style-type: none"> Ergots, β adrenergic receptor Methysergide

Questions from Various PG Entrance Examinations (from the book 'Review of PGME' by same authors) General.

180. Positive urinary anion gap is found in –

- (a) Alcoholic ketoacidosis
- (b) Diabetic ketoacidosis
- (c) Renal tubular acidosis
- (d) Diarrhea

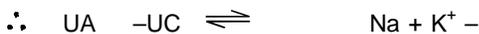
EXPLANATION:

Ans. (c) i.e., Renal tubular acidosis.

[Ref. Harrison 17th/e, p. 292; Washington manual of medicine p. 67]

Anion gap

- Serum sodium accounts for most of the cations. Other cations include K^+ , Mg^{++} , Ca^{++} .
- The major cation concentration i.e. Na^+ concentration in the serum is **140 meq**.
- On the other hand the concentration of major anion i.e., serum HCO_3^- and Cl^- account for only about **128 meq** of balancing anions.
- The remaining anions include negatively charged proteins.
- This gap b/w the routinely measured cations and the routinely measured anion is called the **anion gap**.
- So the anion gap is not a mysterious entity, it simply exists because the routine serum electrolyte panel do not measure all the anions present.
- Therefore, the anion gap represents a group of anions that are present but not identified. If all the anion gaps were measured no gap would exist. **Urinary anion gap :-**
- The cations normally present in urine are Na^+ , K^+ .
- The anions normally present in the urine is Cl^- (HCO_3^- not present).
- Only Na^+ , K^+ and Cl^- are normally present so the other charged ions are either unmeasured anions and unmeasured cations.
- Because of the requirement for macroscopic electroneutrality the total anion charge always equate total cation charge.



Cl^-

- This is the urinary anion gap.
- Urinary anion gap is **directly correlated to the urinary ammonia production** and is used to distinguish between different types of normal anion gap acidosis.
- Normal urinary NH_4^+ production is **40**. At this normal urinary anion gap is **around 0 or slightly positive**.
- Urinary anion gap in normal anion gap acidosis due to diarrhoea.**
- In these cases kidney compensates for the acidosis by excreting large amount of NH_4^+ (to cause net loss of H^+ from the body). NH_4^+ is positively charged so a rise in its urinary concentration i.e. increased unmeasured cations will cause a fall in urinary anion gap.

Urinary anion gap in cases of normal anion gap acidosis due to R.T.A.

- In these cases as the problem is with the kidney itself, it cannot increase urine ammonium production and thus the urine anion gap is not affected and it remains zero or slightly positive.
- Thus a negative UAG suggests G.I. loss of bicarbonate (diarrhoea), a positive urinary anion gap suggests impaired renal acidification.
- As a memory aid remember neGUTive – negative UAG in bowel causes.

Remember

- The calculation of urinary anion gap assumes that no anions other than Cl⁻ are significantly present. In pure normal serum anion gap acidosis this is true. However in presence of elevated serum anion gap acidosis other anions such as **acetacetate** or **lactate** are present thus rendering urinary anion gap useless test.

181. The cause for Resurgent malaria are following except?

- (a) Inadequate vector control
- (b) Mosquito mutations
- (c) Improper use of drug treatment
- (d) Increase in the number Plasmodium species

EXPLANATION:

Ans. (d) i.e., Increase in the number Plasmodium species.

(Ref. H-17th/1283)

Resurgence Of Malaria

- A global resurgence of malaria began around 1970 and continues with gaining momentum.
 - The resurgence of malaria is directly related to reduced vector control.
- The dominant factors responsible are o *The proliferation of resistance to standard antimalarial drugs* and o *the social reluctance to apply residual insecticides.*
- DDT and chloroquine eradicated malaria or controlled malaria across vast reaches of the globe and the loss of these weapons without practical alternatives has left those areas susceptible to encroachment and re-establishment of endemic malaria.
- The most worrisome aspect of a encroachment of endemic malaria is the lack of infrastructure and implements with which to gain control.

183. True about antiphospholipid antibody syndrome include following:

- (a) Bleeding
- (b) Thrombosis
- (c) Recurrent fetal loss
- (d) Autoimmune disease

EXPLANATION:

Ans. (a) i.e., Bleeding.

(Ref. H-17th/Chapter 277) *Antiphospholipid*

Syndrome

- Antiphospholipid syndrome develops in patients expressing antibodies to anionic phospholipids, particularly 2 glycoprotein 1.
- Half of the patients have no obvious cause, a few are pregnant, some are already receiving hemodialysis or have a renal allograft, and the rest have a primary glomerulonephritis (nil lesion or membranous nephropathy) or a primary glomerulonephritis (nil lesion or membranous nephropathy) or a rheumatologic disease such as SLE. Lupus patients also often coexpress a lupus anticoagulant, with elevation in the activated partial tissue thromboplastin time.
- Clinical presentation of the catastrophic form of antiphospholipid syndrom appears as mixed thrombosis of the arterial and venous circulation with varying degrees of thrombocytopenia, hemolytic anemia, deep vein thrombosis, transient ischemic attacks, pulmonary embolism, and spontaneous abortions; lesser degrees of disease are more common.
- The kidneys are injured in this syndrome in approximately 25% of patients, particularly those with IgG antibodies.
- Some patients develop acute renal failure, while others suffer sub-clinical damage over time.
- Patients who present with acute flank pain and renal vein thrombosis in the setting of proteinuria should always be checked for antiphospholipid antibodies.
- Clinically, the antiphospholipid syndrome can wax and wane, and many patients have recurrences; <10% present with catastrophic multi-organ involvement and acute renal failure.
- Dialysis patients with antiphospholipid syndrome experience frequent occlusion of their arteriovenous graft. The urinalysis in most patients typically shows a mixed picture of moderate proteinuria (1–2 g/24 h) and hematuria.

- Glomerular capillaries and large and small renal arteries and veins occlude, accompanied by ischemic mesangiolysis and vessel hyperplasia, leading eventually to chronic glomerulosclerosis and interstitial fibrosis.
- Evidence of antiphospholipid syndrome on biopsy can usually be distinguished as an added complication of an underlying renal disease, particularly lupus nephritis.
- The mainstay of treatment for antiphospholipid syndrome is warfarin. There is also evidence of vasculitis in many patients due to complement-fixing antiphospholipid antibodies, which responds to the addition of steroids.
- Acute renal failure sometimes responds to removal of antiphospholipid antibodies with plasmapheresis and adjustment of immunosuppression where clinically indicated.

186. True about third heart sound?

- (a) Heard due to contraction of right ventricle
- (b) Loud in ASD
- (c) Can be heard in constrictive pericarditis (d) Soft in cardiac tamponade

EXPLANATION:

Ans. (a) i.e., Heard due to contraction of right ventricle.

(Ref. H-17th/1386)

- An S₃ that is earlier (0.10–0.12 s after A₂) and higher-pitched than normal (A pericardial knock) often occurs in patients with **constrictive pericarditis**; its presence depends on the restrictive effect of the adherent pericardium, which abruptly halts diastolic filling.
- The three principal features of tamponade (*Beck's triad*) are hypotension, soft or absent heart sounds, and jugular venous distention with a prominent x descent but an absent y descent.

Third heart sound (S₃)

- Low-pitched sound
- Produced in the ventricle 0.14–0.16 s after A₂, at the termination of rapid filling.
- Frequent in normal children and in patients with high cardiac output.
- In patients over 4 years, an S₃ usually indicates o impairment of ventricular function, o AV valve regurgitation, or o other conditions that increase the rate or volume of ventricular filling.
- The left-sided S₃ is best heard with the bell piece of the stethoscope
- The left-sided S₃ is best heard at the left ventricular apex during expiration and with the patient in the left lateral position.
- The right-sided S₃ is best heard at the left sternal border or just beneath the xiphoid and is usually louder with inspiration.
 - Third heart sounds often disappear with treatment of heart failure. *Fourth heart sound (S₄)*
- Low-pitched,
- Presystolic sound produced in the ventricle during ventricular filling; – Associated with an effective atrial contraction
- Best heard with the bell piece of the stethoscope.
- The sound is absent in patients with atrial fibrillation.
- The S₄ occurs when diminished ventricular compliance increases the resistance to ventricular filling; it is frequently present in patients with systemic hypertension, aortic stenosis, hypertrophic cardiomyopathy, ischemic heart disease, and acute mitral regurgitation.
- Most patients with an acute myocardial infarction and sinus rhythm have an audible S₄.
- The S₄ is loudest at the left ventricular apex when the patient is in the left lateral position and is accentuated by mild isotonic or isometric exercise in the supine position.
- The right-sided S₄ is present in patients with right ventricular hypertrophy secondary to either pulmonic stenosis or pulmonary hypertension and frequently accompanies a prominent presystolic a wave in the **JVP**.
- An S₄ frequently accompanies delayed AV conduction, even in the absence of clinically detectable heart disease.
- The incidence of an audible S₄ increases with increasing age.
- Whether an audible S₄ in adults without other evidence of cardiac disease is abnormal remains controversial.

190. Brown tumor of bone is seen in?

- (a) Hyperparathyroidism
- (b) Hypoparathyroidism
- (c) Hypothyroidism
- (d) Hyperthyroidism

EXPLANATION:

Ans. (a) Hyperparathyroidism

(Ref. Robin's pathology 7th/456)

The hallmark of PTH excess is **increased osteoclastic activity, with bone resorption**. Cortical and trabecular bone are lost and replaced by loose connective tissue. Bone resorption is especially pronounced in the subperiosteal regions and produces

characteristic radiographic changes, best seen along the radial aspect of the middle phalanges of the second and third fingers. Microscopically, excessive resorptive activity is manifested by the presence of **increased numbers of osteoclasts and accompanying erosion of bone surfaces**. The marrow space contains increased amounts of loose fibrovascular tissue. Hemosiderin deposits are present, reflecting episodes of hemorrhage resulting from fractures of the weakened bone. In some instances, collections of osteoclasts, reactive giant cells, and hemorrhagic debris form a distinct mass, termed a **brown tumor of hyperparathyroidism**.

Cystic change is common in such lesions (hence the name **osteitis fibrosa cystica**), and they can be confused with primary bone neoplasms.

193. A 30 years old female married five years back died. Under which of following, autopsy of this patient should be conducted?

- (a) CrPC 174
- (b) CrPC 176
- (c) CrPC 304
- (d) CrPC 306

EXPLANATION:

Ans. (b) CrPC 176

(Ref. FMT Reddy 21st/pg.6)

CrPC. 176 is for (Magistrate inquest):

- When any person dies while in the custody of the police.
- The case involves suicide by a woman within seven years of her marriage.
- The case relates to the death of a woman within seven years of tier marriage in any circumstances raising a reasonable suspicion that some other person committed an offence in relation to such woman.
- The case relates to the death of the woman has made a request in this behalf.

CrPC. 176. Inquiry by Magistrate into cause of death.

- 1[When any person dies while in the custody of the police or when the case is of the nature referred to in clause (i) o or clause (ii) of sub-section (3) of section 174], the nearest Magistrate empowered to hold inquests shall, and in any other case mentioned in sub-section (1) of section 174, any Magistrate so empowered may hold an inquiry into the cause of death either instead of, or in additional to, the investigation held by the police officer; and if he does so, he shall have all the powers in conducting it which he would have in holding an inquiry into an offence.
- The Magistrate holding such inquiry shall record the evidence taken by him in connection therewith in any manner hereinafter prescribed according to the circumstances of the case.
- Whenever such Magistrate considers it expedient to make an examination of the dead body of any person who has been already interred, in order to discover the causes of his death, the Magistrate may cause the body to be disinterred and examined.
- Where an inquiry is to be held under this section, the Magistrate shall, wherever practicable, inform the relatives of the deceased whose names and addresses are known, and shall allow them to remain present at the inquiry.

CrPC. 174. Police to inquire and report on suicide, etc.

- (1) When the officer in charge of a police station or some other police officer specially empowered by the State Government in that behalf receives information that a person has committed suicide, or has been killed by another or by an animal or by machinery or by an accident, or has died under circumstances raising a reasonable suspicion that some other person has committed an offence, he shall immediately give intimation thereof to the nearest Executive Magistrate empowered to hold inquests, and, unless otherwise directed by any rule prescribed by the State Government, or by any general or special order of the District or Sub-divisional Magistrate, shall proceed to the place where the body of such deceased person is, and there, in the presence of two or more respectable inhabitants of the neighborhood shall make an investigation, and drawn up a report of the apparent cause of death, describing such wounds, fractures, bruises, and other marks of inquiry as may be found on the body, and stating in what manner, or by what weapon or instrument (if any), such marks appear to have been inflicted.
- (2) The report shall be signed by such police officer and other persons, or by so many of them as concur and shall be forthwith forwarded to the District Magistrate or the Sub-divisional Magistrate.
- (3) [When (i) The case involves suicide by a woman within seven years of her marriage: or (ii) The case relates to the death of a woman within seven years of tier marriage in any circumstances raising a reasonable suspicion that some other person committed an offence in relation to such woman; or (iii) The case relates to the death of a woman within seven years of her marriage and any case relative of the woman has made a request in this behalf, or (iv) There is any doubt regarding the cause of death; or (v) The police officer for any other reason considers it expedient so to do, he shall, subject to such rules as the to its being examined, to the nearest Civil Surgeon, or other qualified medical man appointed in this behalf by the State Government, if the state of the weather and the distance admit of its being so forwarded without risk of such putrefaction on the road as would render such examination useless.
- (4) The following Magistrates are empowered to hold inquests, namely, any District Magistrate or Sub-divisional Magistrate and any other Executive Magistrate specially empowered in this behalf' by the State Government or the District Magistrate.

198. Which of the following predisposes to atherosclerosis?

- (a) Insulin deficiency

- (b) Hyperestrogenemia
- (c) Anaemia
- (d) Testosterone loss

EXPLANATION:

Ans. (b) i.e., Hyperestrogenemia.

(Ref. H-17th/2337)

Estrogen may slow early stages of atherosclerosis but have adverse effects on advanced atherosclerotic lesions. It has been hypothesized that the prothrombotic and proinflammatory effects of estrogen manifest themselves predominantly among women with sub-clinical lesions who initiate HT well after the menopausal transition, whereas women with less arterial damage who start HT early in menopause may derive cardiovascular benefit because they have not yet developed advanced lesions. Nonhuman primatedata support this concept.

Marked increases in the Alpha lipoproteins are seen in obstructive liver disease and cirrhosis. Marked decreases are seen in parenchymal liver disease. Tangier's disease is a rare genetic disorder characterized by the total absence of normal Alpha lipoproteins. Heterozygotes exhibit decreased levels of Alpha lipoproteins. It should be notes that hyperestrogenemia (pregnancy or oral contraceptive use) may cause moderate elevations in the Alpha lipoproteins.

200. Most important investigation in VVF?

- (a) Three swab test
- (b) IVP
- (c) Cystoscopy (d) Vaginal culture

EXPLANATION:

Ans. (c) i.e., Cystoscopy.

(Ref. Novak's Gynecology 881)

VVF

DYE INSTILLATION

Although the ideal method of confirming genitourinary fistula is by direct visualization, there are instances in which physical examination and inspection are unrevealing. In these circumstances, bladder instillation of visually distinct solutions such as methylene blue, sterile milk, or indigo carmine can often indicate the location.

When the presence of a urinary fistula is uncertain, or the location in the vagina cannot be identified, a modified tampon test or three-swab test is recommended. During testing, gauze is packed sequentially into the vaginal canal. a diluted solution of methylene blue or indigo carmine is instilled into the bladder in a retrograde fashion using a catheter. After the patient has engaged in 15 to 30 minutes of routine activity, the gauze is removed serially from the vagina and inspected for presence of dye. The specific gauze colored with dye suggests where in the vagina a fistulous tract is located a proximal or high location in the vagina for the innermost gauze, and a low or distal fistula for the outermost. If the distally placed sponge is stained with dye, however, it is important to confirm that it was not contaminated by stress incontinence.

CYSTOURETHROSCOPY

This from of endoscopy is another valuable adjunct to diagnostic evaluation. It allows localization of the fistula, determination of its proximity to the ureteral orifices, and assessment of surrounding bladder mucosa viability. In addition,

VOIDING CYSTOURETHROGRAPHY

This radiologic study can also demonstrate leakage into the vagina and help confirm the presence, location, and number of fistulous tracts. Another radiographic tool that has been used to identify genitourinary fistula is sonography with color Doppler flow. The efficacy of this technique has not been substantiated, and some have documented low sensitivity rates for fistula detection.