

1. Which statistic regarding acute abdominal pain is **incorrect**
 - a) Up to 25% of mesenteric ischaemia have a normal serum lactate
 - b) More than 33% of patients with appendicitis do not have rebound tenderness
 - c) Rectal exam has been shown to significantly improve diagnostic accuracy and should be mandatory in all abdominal examinations
 - d) Up to 20% of perforations will not have free air demonstrated on an erect film

2. Which is a component of Samuel's Paediatric appendicitis score (PAS) that is different from the Alvarado Appendicitis score it is based on
 - a) Rebound tenderness is not in Alvarado score
 - b) PAS has hopping tenderness in RLQ instead of tenderness over RIF
 - c) Total score is different between the two
 - d) The WCC is given less weight (scores less) in the PAS

3. Which is true regarding pelvic pain in pregnant 1st trimester women
 - a) 90% of ectopics pregnancies are associated with PV bleeding
 - b) Heterotopic pregnancies occurs 1 in 3,000 naturally conceived pregnancies
 - c) Discrimination zone for vaginal ultrasound identification of a gestational sac is Bhcg > 1,000 mIU/mL
 - d) Ultrasound diagnosis of ectopic pregnancy is made by the absence of an IU gestational sac

4. Which is a feature of Clostridium Difficile colitis
 - a) Severe vomiting
 - b) Diarrhea day 1 of starting oral antibiotics
 - c) Ileus without diarrhea
 - d) Aminoglycoside (gentamicin) antibiotic given in the past 2 weeks

5. Which drug does **not** have an antiemetic property
 - a) Levodopa
 - b) Droperidol
 - c) Lorazepam
 - d) Promethazine (Phenergan)

6. Regarding diarrhea which is correct
 - a) 15% are infectious cause and 85% non infectious
 - b) Glucose dependent water absorption in intestinal villi are often targeted by enterotoxins
 - c) Intestinal crypts are responsible for Na transport and passive water absorption intracellularly
 - d) Normally <100mL of water is lost in stools daily

7. Which rehydration liquid composition is **not** correct?
- a) WHO recommendation: Na = 90 mmol/L, Carbohydrate = 111 mmol/L, Osmolality = 331 mOsm/L
 - b) Apple Juice: Na = 45 mmol/L, Carbohydrate = 90 mmol/L, Osmolality = 240 mOsm/L
 - c) Gastrolyte: Na = 60 mmol/L, Carbohydrate = 90 mmol/L, Osmolality = 240 mOsm/L
 - d) Sports Drink: Na = 20mmol/L, Carbohydrate = 255 mmol/L, Osmolality = 330 mOsm/L
8. Regarding Clostridium Difficile which is true
- a) Up to 15% of hospitalized patients are colonized with C.Difficile
 - b) Although symptoms usually begin 1-2 weeks after antibiotic use, it can be delayed for many weeks
 - c) A positive stool culture for C.Difficile implies a patient has C.Difficile colitis
 - d) Relapse is rare once disease is fully treated
9. Which is **not** a common feature in Crohn's disease
- a) Ileum is the most common area affected by Crohn's
 - b) Skip lesions help differentiate it from Ulcerative colitis
 - c) Inflammation mainly limited to mucosal surface of bowel and is only rarely full thickness
 - d) Risk of malignancy is 3 time higher than general population but risk is less compared to patients with ulcerative colitis
10. Which is a common feature of Ulcerative Colitis
- a) Toxic megacolon is more common than in Crohn's disease
 - b) Smoking can worsen the disease
 - c) The disease is not a risk factor for DVTs and PEs
 - d) Antidiarrheal agents should be used if profuse diarrhea occurs during an attack
11. Regarding the Rome Criteria for constipation which is **not** a feature in which two or more must be present for the diagnosis of constipation
- a) Straining at defecation at least 25% of the time
 - b) Hard stools at defecation at least 25% of the time
 - c) Incomplete evacuation at least 25% of the time
 - d) Less than 5 bowel motions per week
12. Which is a potential side effect of "Fleet" enema
- a) Hyperphosphataemia
 - b) Melanosis Coli
 - c) Hypercalcaemia
 - d) Hyponatraemia

13. Which is the right order for incidence of upper GI bleeding, from most common to rare
- a) Gastroesophageal Varices, Peptic ulcer disease, Gastritis/esophagitis, Mallory Weiss
 - b) Peptic ulcer disease, Gastroesophageal Varices, Gastritis/esophagitis, Mallory Weiss
 - c) Gastritis/esophagitis, Peptic ulcer disease, Gastroesophageal Varices, Mallory Weiss
 - d) Peptic ulcer disease, Gastritis/esophagitis, Mallory Weiss, Gastroesophageal Varices
14. Which is **not** true about upper GI bleeds
- a) 14% of Bright red PR bleeding is from a Upper GI source
 - b) Ingestion of Beets can simulate Hematochezia and it can be diagnosed by a positive stool guaiac test
 - c) Likely if Urea / Creatinine ratio > 200
 - d) Glasgow Blatchford takes into account haemaglobin and history of syncope, liver & heart disease. AIMS65 scores age and mental state but not haemaglobin or past history
15. Regarding lower GI bleeding which is correct
- a) Lower GI source is considered distal to junction between Jejunum and caecum
 - b) 20% of lower GI bleeds resolve spontaneously
 - c) The most common cause to least common is: Diverticular disease, colitis, polyps, malignancies
 - d) A cause for bleeding cannot be determined in 20% of lower GI bleeds
16. Which is not true of Mesenteric Ischaemia
- a) Embolism is the cause in 50% of cases
 - b) Venous ischaemia can occur in 10% of cases
 - c) Mortality is >50% even if diagnosed within 24 hours
 - d) Elevated lactate >2mmol/L is 95% sensitive
17. The three major anatomical constrictions within the adult oesophagus are all **except** which
- a) Cricopharyngeal muscle at C6
 - b) The thoracic inlet at T1
 - c) The level of the aortic arch at T4
 - d) Gastroesophageal junction at T10-T11
18. Regarding Boerhaave's Syndrome which is correct
- a) Most common site of rupture is in the left posterolateral aspect of the distal esophagus
 - b) If for fluoroscopy or CT diagnosis the contrast medium for ingestion would be barium
 - c) Mediastinal emphysema should always be present in lower esophageal perforations
 - d) Pleural effusions are a less common in lower esophageal perforations compared to cervical esophageal perforations

19. In children with foreign body ingestion which is correct
- a) Coins in the esophagus present their circular face on anteroposterior films whilst aspirated coins show their face on lateral films
 - b) Bony foreign bodies can be seen on plain films approximately 80% of the time
 - c) Glucagon IV 1-2mg has good success rates for distal esophageal FB
 - d) Foreign bodies are benign once they have passed the pylorus
20. Regarding button battery ingestion which is **not** true
- a) Perforation occurs within 6 hours of ingestion if lodged in the esophagus
 - b) Lithium cells are at greater risk of adverse outcomes
 - c) Heavy metal toxicity is a high risk especially in mercury containing batteries
 - d) A double ring sign can distinguish a button battery from a coin on Xrays
21. Which is true of Peptic ulcer disease and gastritis
- a) Urea breath test has poor sensitivity and specificity
 - b) Proton pump inhibitors are equally effect as H2 receptor antagonist at inhibiting H.Pylori
 - c) All H2 receptor antagonists have similar efficacy, adverse effect and drug interaction profiles
 - d) Bleeding peptic ulcers have a mortality rate of up to 10%
22. Regarding cause of pancreatitis which is the most common
- a) Alcoholic
 - b) Gallstone
 - c) Idiopathic
 - d) Hypertriglyceridemia
23. Which is the smallest level of lipase that will have specificity of >98% for acute pancreatitis if normal range is 7-60 IU/L
- a) 80 IU/L
 - b) 150 IU/L
 - c) 200 IU/L
 - d) 300 IU/L
24. Which is **not** a part of the initial assessment criteria for Ranson's score upon admission for pancreatitis
- a) WCC > 16
 - b) Glucose > 10mmol/L
 - c) LDH >350
 - d) Calcium < 2mmol/L

25. Which is **not** a risk factor for acute acalculous cholecystitis
- a) Male sex
 - b) Burns
 - c) Diabetes
 - d) Long term parenteral nutrition
26. Which is true about acute cholecystitis and biliary system diseases
- a) For cholangitis, Charcot's triad of fever, RUQ pain and jaundice is present in >80% of cases
 - b) Choledocholithiasis cannot be excluded with Ultrasound or CT and definitive diagnosis needs MRCP or ERCP
 - c) The absence of fever makes acute cholecystitis very unlikely
 - d) Murphy's sign positive is highly sensitive but poorly specific for acute cholecystitis
27. Which is **not** a Vitamin K dependent clotting factors produced by the liver
- a) Factor II
 - b) Factor VII
 - c) Factor IX
 - d) Factor XII
28. Which virus and demographic has the **highest** percentage of developing a chronic disease
- a) Hepatitis B in adults
 - b) Hepatitis C in adults
 - c) Hepatitis B in infants <1 years old
 - d) Hepatitis B in children 1 to 5 years old
29. Which consequence of hepatic cirrhosis has the worst mortality prognosis over a less than 6 month period?
- a) Spontaneous bacterial peritonitis
 - b) Type 1 hepatorenal syndrome
 - c) Type 2 hepatorenal syndrome
 - d) Hepatic encephalopathy
30. Regarding the following hepatic diseases which is correct
- a) Sclerosing cholangitis is often associated with inflammatory bowel disease
 - b) In Primary Biliary Cirrhosis men are significantly more likely to develop the disease compared to women
 - c) Serum copper is usually elevated in Wilson's disease
 - d) Elevated Serum Iron is a better indicator of Haemochromatosis compared to serum Ferritin and transferrin

31. Which is correct regarding acute appendicitis
- a) Appendix is retrocaecal in 10% of cases
 - b) Alvarado and Samuel (paediatric appendicitis) scoring systems are highly sensitive for appendicitis and if negative rules out the diagnosis
 - c) Positive WCC on urinalysis excludes a diagnosis of appendicitis
 - d) Perforation may lead to disappearance of usual imaging findings on ultrasound
32. Which is **not** correct regarding Diverticulitis
- a) Asian populations have a higher risk of left sided (descending) colon disease compared to Caucasian populations
 - b) Anaerobes are the most common organisms causing Diverticulitis
 - c) Smoking and obesity increase risk of Diverticulitis
 - d) Uncomplicated Diverticulitis has minimal mortality risk and can often be treated as an outpatient
33. Which is not a feature on plain xray that is suggestive of a small or large bowel obstruction
- a) 3 instances of dilation over 3 cm of small bowel
 - b) 7 cm dilation of caecum
 - c) Collapsed distal colon
 - d) Pneumatosis coli
34. Which is **not** a risk factor for sigmoid volvulus
- a) On medication for schizophrenia
 - b) Bedridden
 - c) Lived in Africa or South America for a long period of time
 - d) Low fiber diet
35. Which type of hernia has the **lowest** rate of incarceration or obstruction
- a) Umbilical hernia
 - b) Spigelian hernia
 - c) Obturator hernia
 - d) Richter hernia
36. Regarding anorectal disorders which is correct
- a) In >90% of cases anal fissures occur anteriorly in the midline
 - b) All perirectal abscesses should be drained in the operating room
 - c) All rectal prolapses should be treated surgically and the use of granulated sugar for reduction should be avoided
 - d) Anal canal is an uncommon area for malignant melanoma

Answers

1. C (Rectal exam does not increase diagnostic accuracy beyond regular physical exam aside from PR bleeding or malaena)
2. D (Both have 10 points, rebound tenderness is not on the PAS, PAS have both hopping tenderness worth 2 points and RIF tender. Scores ≤ 2 excludes appendicitis, 3-5 requires further investigations, ≥ 6 have a high sensitivity 93% for appendicitis. Paediatric Abdominal conditions DUNN RJ emergencymedicinemanual.com 2016)
3. A (Discrimination zone is Bhcg $> 1,500$ mIU/mL, US diagnosis of ectopic is made by visualization of an adnexal mass. Heterotopic pregnancy is 1 in 30,000 in naturally conceived and 1:100 in assisted reproduction. Radiopedia.org Heterotopic pregnancy.)
4. C (Vomiting is not a prominent feature, colitis usually occurs 4-5 days after antibiotics, ileus instead of diarrhea can represent severe disease, aminoglycosides rarely associated with C.Diff. Organisms causing infective gastroenteritis DUNN RJ emergencymedicinemanual.com 2016)
5. A (dopamine agonists can cause nausea)
6. D (85% of diarrhea are infectious, enterotoxins target Na transporters and often spare glucose transporters, intestinal crypts are involved in secretion)
7. B (Apple juice and Soft drinks: Na = 3 mmol/L, CHO = 690 mmol/L, Osmolality = 730 mOsm/L. Infant and Children: Management of Acute Gastroenteritis, 4th edition.
http://www0.health.nsw.gov.au/policies/gl/2014/pdf/GL2014_024.pdf)
8. B (Up to 25% colonized with C.Diff, although stool cultures are 100% sensitive it's presence does not imply cause of symptoms only positive toxin assays imply cause, it has 25% relapse rate)
9. C (Crohn's is full thickness inflammation vs primarily mucosa in ulcerative colitis)
10. A (Smoking worsens Crohn's but may be protective for ulcerative colitis, thromboembolic events is an extra-colonic manifestation of ulcerative colitis, antidiarrheal agents can precipitate toxic megacolon. Inflammatory Bowel Disease DUNN RJ emergencymedicinemanual.com 2016)
11. D (Less than 3 bowel motions per week)
12. A (Melanosis coli discolouration of colon due to stimulants ie Senna, Fleet can cause hypocalcaemia, hyperphosphataemia, hypernatraemia and acidosis. MIMS May 2016)
13. D (Tintinalli states peptic ulcer most common, DUNN: duodenal ulcer and gastric erosions both 25%, gastric ulcer 20%, Mallory Weiss 20%, Varices 10%. Upper GI haemorrhage DUNN RJ)
14. B (Guaiac test will be positive in the presence of blood. Upper GI haemorrhage DUNN RJ emergencymedicinemanual.com 2016)
15. C (Lower GI starts at the ligament of Teitz the junction between duodenum and jejunum, 80% of LGI bleeds resolve spontaneously, $>50\%$ of LGI have no cause found)
16. D (lactate >2 is 75% sensitive. Mesenteric Ischaemia DUNN RJ emergencymedicinemanual.com)
17. B (In kids the two additional areas of constriction are at thoracic inlet T1 and Tracheal bifurcation at T6)
18. A (Mediastinal emphysema takes time to develop and is less commonly detected in lower esophageal perforation, pleural effusion less common in cervical perforations. Barium extravasation would cause a chronic mediastinitis therefore gastrograffin should be used but of note water-soluble contrast aspiration associated with massive APO. Barium Swallow
<http://radiopaedia.org/articles/barium-swallow>. Oesophageal Causes of chest pain DUNN RJ.)

19. A (Boney FB <50% seen on plain xrays, glucagon has poor success rates and should only be used in adults, Irregular shaped FB or multiple batteries at risk of perforation or pressure necrosis even if past pylorus. GIT foreign bodies DUNN RJ emergencymanual.com 2016)
20. C (Heavy metal poisoning highly unlikely to virtually non existent. GIT foreign bodies DUNN RJ)
21. D (Urea breath test have >95% sensitivity and specificity, PPIs can inhibit H.pyori, cimetidine have higher adverse effect and drug interaction profiles)
22. B
23. C (Lipase >3 times normal approaches a specificity of 100%. Pancreatitis DUNN RJ emergencymanual.com 2016)
24. D (Initial criteria: WCC > 16, Age > 55, Glucose > 10, AST > 250, LDH > 350. Later tests within 48h: HCT drop > 10%, BUN increase, Ca < 2, pO₂ < 60, Base deficit > 4mg/dL, Fluids > 6L. Ranson score medcalc. <http://www.mdcalc.com/ransons-criteria-for-pancreatitis-mortality>)
25. A (Risks of acute acalculous cholecystitis: old age, diabetes, immunosuppression, childbirth, sepsis, burns, trauma, surgery, long term TPN)
26. B (From Tintinalli 8th edition section 9: Charcot's triad only present in about 50% of cholangitis, fever present in only 1/3 of acute cholecystitis, Murphy sign is more specific 87% than sensitive 65% for acute cholecystitis, Choledocholithiasis is difficult to exclude with US or CT and more definitive evaluation are MRCP and ERCP)
27. D
28. C (From Tintinalli 8th edition section 9: Hep B 6-10% in adults, 90% in infants, 30% in children <5, Hep C >75%)
29. B (Type 1 hepatorenal syndrome median survival of 2 weeks without medical treatment, type 2 is gradual and may not advance, SBP has 68% survival in one month and 30% at 6 months, encephalopathy has 20% mortality at 3 years. Hepatic diseases DUNN RJ emergencymanual.com 2016)
30. A (Primary biliary sclerosis is 9 times more prevalent in women, although Wilson's disease caused by accumulation of copper in tissues the serum copper may be low, Ferritin and transferrin elevated in haemochromatosis but elevated iron or ferritin alone may have other causes. Hepatic diseases DUNN RJ emergencymanual.com 2016)
31. D (From Tintinalli 8th edition section 9: scoring systems, the low risk score only had 72% sensitivity, appendix retrocaecal in 30%, positive WCC or RBC present in 30% of appendicitis. Appendicitis DUNN RJ emergencymanual.com 2016)
32. A (Asian populations have a higher risk of right sided colon disease compared to Caucasians)
33. B (upper limit of caecum 9 cm and upper limit of rest of colon 6cm. Small bowel obstruction and Large bowel obstruction, radiopedia.org 2016)
34. D (Risks: elderly, bedridden, anticholinergic medication for schizophrenia, chronic neurological conditions, fiber rich diet ie Africans, Chagas disease ie South American, chronic laxative use or abuse. Sigmoid volvulus, radiopedia.org 2016)
35. A (Hernias with lower risk of obstruction: inguinal, umbilical and incisional. High risk hernias: femoral, Spigelian = lateral rectus muscle, Obturator – very high risk of bowel obstruction and perforation, Richter – involves portion of bowel wall and at risk of strangulation and gangrene)
36. B (Anal fissures typically posterior midline, Digital reduction is 1st line treatment of anal prolapse but if difficult can use granulated sugar to help reduce oedema, anal canal third most common area for malignant melanoma behind skin and eyes)