

GU SBA Questions

Questions were made by students on behalf of The Peer Teaching Society. We hope there are no mistakes but are not liable for any false or misleading information.

1. A 27-year-old male presents to the GP with a lump in his testicle. When taking the history, you note his wife is struggling to get pregnant. On examination you note the lump is not painful, but he mentions a dragging sensation.

Which tumour marker is most likely to be raised in suspected testicular cancer?

- a) Prostate specific antigen (PSA)
- b) Alpha feto-protein (AFP)
- c) Carcinoembryonic antigen (CEA)
- d) Cancer antigen 125 (Ca125)
- e) Fibrin

2. A 65-year-old women presents to her GP with blood in her urine which is painless. The GP suspects transitional cell carcinoma, and she is referred to the urologists on a 2 week wait list.

What is the gold standard investigation to confirm this diagnosis?

- a) Urine microscopy
- b) FBC
- c) CT
- d) Urinary biomarkers
- e) Cystoscopy

3. An 88-year-old man presents to the GP with weight loss, tiredness and difficulties passing urine however he has a feeling of incomplete emptying. The GP notes that he has a raised PSA.

What is the staging system used for this cancer?

- a) Gleason scoring
- b) TNM
- c) FIGO
- d) Child-Pugh
- e) Dukes

4. A 35-year-old man presents to A and E with a sudden onset headache that he grades a 10/10. When you look at his family history you note he has autosomal dominant polycystic kidney disease.

What is this man likely to be suffering from?

- a) Sub Dural haemorrhage
- b) Sub arachnoid haemorrhage
- c) Extra Dural haemorrhage
- d) Migraine
- e) Giant cell arteritis

5. A 25-year-old male arrives in A&E with severe burns to both legs and torso. The FY1 doctor knows to start IV fluids to replace the water losses in the damaged skin. Before this has happened, the kidneys have already reacted to the hypovolaemia.

Which hormone has been released by the kidney in this response?

- a) Aldosterone
- b) Angiotensin I
- c) Angiotensin II
- d) Renin
- e) Erythropoietin

6. A 45-year-old man was seen by his GP when he started coughing and found small amounts of blood in his sputum. On taking a history it was found that the patient had not been urinating very much in a day. The GP decides to get a chest x-ray, take some bloods and do a urine dip.

The results are:

- CXR – interstitial pneumonia with patchy alveolar infiltrates – suggestive of bleeding sites.
- Urine dipstick – positive for blood and protein, negative to nitrates.
- Bloods – cANCA negative, pANCA positive, haemoglobin low, anti-Glomerular basement membrane Antibodies positive, urea high, eosinophils normal

What is the most likely diagnosis?

- a) Microscopic polyangiitis
- b) Granulomatosis with polyangiitis
- c) Goodpasture's syndrome
- d) Post-streptococcal glomerulonephritis
- e) Eosinophilic granulomatosis with polyangiitis

7. A 60-year-old female has recently had some routine bloods taken in her annual check-up which shows high cholesterol. She has been repeatedly ill over the last 3 months. On examination her GP finds some pitting oedema and suspects some form of nephrotic syndrome.

Which of these results would not be found on further investigation?

- a) High levels of anticoagulants
- b) Haematuria
- c) Low plasma albumin
- d) Proteinuria
- e) High serum triglycerides

8. A 40-year-old male has poorly controlled diabetes. As part of his annual check-up the diabetes specialist orders a urinalysis. This showed an eGFR of 43 mL/min/1.73m².

What stage of chronic kidney disease is he can be classified into?

- a) Stage 2
- b) Stage 3a
- c) Stage 3b
- d) Stage 4
- e) Stage 5

9. A 50-year-old male patient comes to see you presenting with blood in their urine. It has been ongoing for the past few days. His blood pressure is high, temperature of 38.5, and has a normal respiratory rate. His urine output is low as well. You note there is slight swelling in both of his legs.

Based on his symptoms, what condition or syndrome does he have?

- a) Nephrotic Syndrome
- b) Nephritic Syndrome
- c) Minimal Change Disease
- d) Hepatocellular Carcinoma
- e) Diabetes Insipidus

10. An 85-year-old lady comes into A&E confused after being found on the floor of her house by her son. Her GCS is 6/15, BP 90/50 mmHg and heart rate of 160bpm. She looks frail and has dry lips and skin. Her son claims that she has not been passing water or opening her bowels for the past 24h.

Her serum creatinine has increased 250% from her baseline and her urine production is 0.45 mL/kg/hour over 12 hours.

What is the diagnosis and what stage is she at?

- a) AKI, stage II
- b) AKI, stage III
- c) Dehydration, Severe
- d) Frailty, Score of 7
- e) CKD, stage II

11. A 24-year-old male comes into your GP clinic complaining of chest pain. After a thorough history, you find out that he has been coughing up blood and tends to get SOB. On examination, you note some swelling in the legs. He mentions that there has been blood in his urine recently as well. Urinalysis confirms this. Blood tests reveal presence of an antibody which points to Goodpasture Syndrome.

What is this antibody?

- a) Double Stranded DNA Antibody
- b) Anti-Nuclear Antibody
- c) Anti-Neutrophil Cytoplasmic Antibody
- d) Anti-Glomerular Basement Membrane Antibody
- e) Anti-Ro and anti-Lo

12. A 22-year-old patient presents to the GP with blood in his urine. He complains of having episodes of nausea & vomiting and feeling extra tired lately. He mentions that he has been taking aspirin and ibuprofen for his chronic headaches.

What is the most likely diagnosis?

- a) Minimal Change Disease
- b) Acute Tubulointerstitial Disease
- c) UTI
- d) Headache Exacerbations
- e) Diabetes insipidus

13. You are a junior doctor working on the urology ward at the Northern General. You have 5 patients under your care who all have a diagnosed UTI.

Which of the following patients are not classed as a complicated UTI patient?

- a) 26-year-old female with diabetes
- b) 45-year-old male with renal stones
- c) 31-year-old pregnant female
- d) 35-year-old female with an indwelling catheter
- e) 55-year-old female

14. Which of the following is not a symptom of pyelonephritis?

- a) Loin pain
- b) Severe headache
- c) Fever
- d) Enlarged Prostate
- e) Pyuria

15. Which of the following antibiotics is used to treat Chlamydia Trachomatis?

- a) Azithromycin
- b) Ceftriaxone
- c) Metronidazole
- d) Clotrimazole
- e) Fluconazole

16. Which of the following class of drugs is the first line treatment for mild Benign Prostatic Hyperplasia?

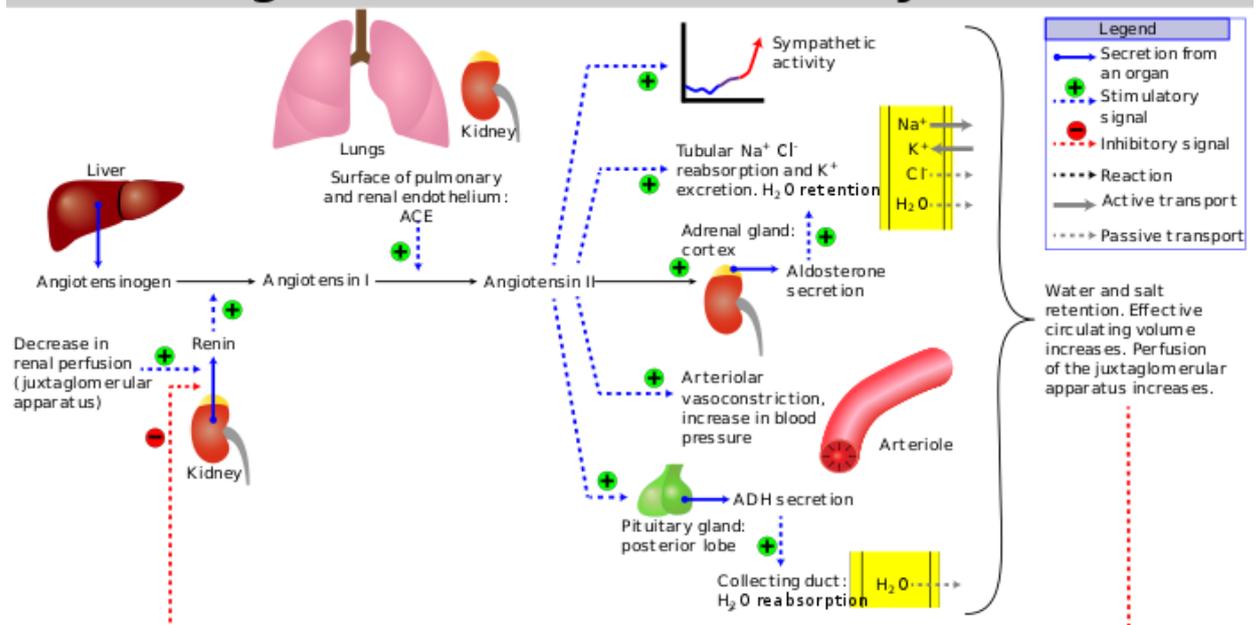
- a) A-blockers
- b) B-blockers
- c) 5 α -reductase inhibitor
- d) 3 α -reductase inhibitor
- e) ACE-Inhibitor

Question	Answers
1. B	<p>A: This is raised in prostate cancer. However it is non-specific and also raised in BPH, older age, UTIs and prostatitis.</p> <p>B: AFP is raised in testicular cancer and so is B-hCG. AFP tends to be raised by yolk sac elements not seminomas where as B-hCG is raised in seminomas.</p> <p>C: CEA is raised in colorectal cancers and is used to track how well cancer treatments are working.</p> <p>D: Ca125 is a very non-specific tumour marker that is used in ovarian cancer but is also raised in endometriosis, liver disease, pelvic inflammatory disease and fibroids.</p> <p>E: Fibrin is raised in bladder cancer.</p>
2. E	<p>A: Urine microscopy can be used to exclude infection but would not be diagnostic</p> <p>B: FBCs are useful to exclude anaemia as a result of the cancer but are not diagnostic of the cancer itself</p> <p>C: CT can help to stage the disease and helps with planning a transurethral resection of the tumour but is only useful after diagnosis to help stage and plan treatment</p> <p>D: These can be used but are seen more commonly in research rather than practice</p> <p>E: Diagnostic investigation of choice</p>
3. A	<p>A: This is calculated by looking at a biopsy and seeing how much of the biopsy looks like normal tissue and how much looks malignant.</p> <p>B: TNM is used very commonly for cancers such as breast, skin and lung.</p> <p>C: FIGO is used in gynaecological cancers</p> <p>D: Child-Pugh is used in liver cancer to look at how well the liver is functioning.</p> <p>E: Dukes is used to stage colorectal cancer and looks at how far the tumour has grown.</p> <div data-bbox="256 1003 943 1464" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: center;">Gleason's Pattern Scale</p> <p>The diagram illustrates the Gleason's Pattern Scale with five levels of prostate cancer progression. On the left, a vertical axis is numbered 1 to 5. On the right, a vertical axis shows the corresponding levels of differentiation: Well differentiated, Moderately differentiated, and Poorly differentiated Anaplastic. The patterns are: 1. Small, uniform glands; 2. More space (stroma) between glands; 3. Distinctly infiltration of cells from glands at margins; 4. Irregular masses of neoplastic cells with few glands; 5. Lack of or occasional glands, sheets of cells.</p> <p style="font-size: small;">Source: John Murtagh, Jill Rosenblatt, Justin Coleman, Clare Murtagh: <i>John Murtagh's General Practice</i>, 7e Copyright © McGraw-Hill Education. All rights reserved.</p> </div>
4. B	<p>A: This is unlikely as sub-dural haemorrhages are seen most commonly in the elderly and the alcoholics and present over a period of time and this is a sudden attack.</p> <p>B: This is the most likely answer as those that suffer from PKD have a 10-15% chance of also suffering from intracranial aneurysms which when ruptured present as a SAH.</p> <p>C: There is no history of trauma which is normally seen in an EDH</p> <p>D: He has not mentioned any of the classic symptoms of migraines such as an aura and photophobia so this is less likely</p> <p>E: GCA is more common in women over the age of 60 so this is unlikely.</p>

5. D

- a) Aldosterone – not released by the kidneys but by zona glomerulosa of the adrenal medulla. Its response is modulated by angiotensin II
- b) Angiotensin I – not released by the kidneys but is the product of the conversion of angiotensinogen (released by the liver) by renin.
- c) Angiotensin II – no released by the kidneys, the result of angiotensin I reacting with angiotensin converting enzyme (ACE) released by the lungs.
- d) Renin - released from the kidney in response to decreased renal perfusion (caused by fluid loss and hypovolaemia)
- e) Erythropoietin – released by the kidney in response to tissue hypoxia caused by decreased blood O₂ availability, not hypovolaemia

Renin-angiotensin-aldosterone system



6. C

- a) Microscopic polyangiitis – is a necrotising vasculitis affecting small and medium-sized vessels. Symptoms: rapidly progressive glomerulonephritis (haematuria, proteinuria, oedema, hypertension), pulmonary haemorrhage. Clinical features are often weight loss, fever, fatigue and renal failure. pANCA positive. Responds to corticosteroids and cyclophosphamide.
- b) Granulomatosis with polyangiitis (Wegener's granulomatosis) has a classic triad of upper and lower respiratory tract involvement and pauci-immune glomerulonephritis. Urinalysis shows glomerulonephritis signs (haematuria, proteinuria). cANCA positive with the classic triad is sufficient for diagnosis. FBC shows anaemia (haematuria and haemoptysis). U&E shows kidney failure with high urea and creatinine
- c) Goodpasture's syndrome – type II hypersensitivity reaction, positive against anti-glomerular basement membrane antibodies. Affects type IV collagen which is found both in the lung alveoli and the glomerulus. Biopsy finds deposits of IgA and IgG. The haemoptysis and haematuria can cause anaemia. Nephritic syndromes are characterised by haematuria, hypertension, proteinuria, oliguria, and uraemia.
- d) Post-streptococcal glomerulonephritis – a kidney disease that can develop after infections caused by bacteria called group A streptococcus. These include throat and skin infections (scarlet fever and impetigo). Occurs ~2 weeks post-infection. The glomeruli become infiltrated by circulating mononuclear inflammatory cells (lymphocytes and macrophages) and crescent formation in the absence of antibody deposition. Similar to minimal change disease. Humoral immune response leads to immune deposit formation and complement activation in glomeruli. Antibodies can be deposited within the glomerulus. This would be classed as a renal cause of AKI as the pathology lies within the kidney.
- e) Eosinophilic granulomatosis with polyangiitis (Churg Strauss syndrome), 3 stages: 1. Airway inflammation, almost all patients experience asthma or allergic rhinitis. 2. Hyper-eosinophilia which causes tissue damage to lungs and digestive tract. 3. Vasculitis which can lead to cell death. pANCA positive. Urinalysis is normal.

7. B	<p>In nephrotic syndromes there is damage to the glomerular filtration barriers. Immunoglobulins are lost in the urine which makes you more susceptible to infections.</p> <p>a) High levels of anticoagulants – the filtration barrier is broken which causes the loss of proteins (including albumin), this lowers the oncotic pressure in blood. To compensate the liver increases its activity. As a result of this there is an increase in the amount of anticoagulants produced. Anticoagulants must be given.</p> <p>b) Haematuria – this is not a sign of nephrotic syndrome, but one of nephritic.</p> <p>c) Low plasma albumin – the damaged filtration barrier can have a loss of podocytes and the negative charge of the glomerular basement membrane. This means that more proteins, including albumin, can be lost in the urine. The protein in the urine makes it frothy. The lower levels of protein in serum lowers the oncotic pressure. This drives fluid to the interstitial space and this causes oedema.</p> <p>d) Proteinuria – see C</p> <p>e) High serum triglycerides are a result of increased liver response to low serum albumin.</p>																								
8. D	<table border="1" data-bbox="253 741 1091 1328"> <thead> <tr> <th colspan="3">GFR categories in CKD</th> </tr> <tr> <th>GFR category</th> <th>GFR (ml/min/1.73)</th> <th>Terms</th> </tr> </thead> <tbody> <tr> <td>G1</td> <td>≥ 90</td> <td>Normal or high</td> </tr> <tr> <td>G2</td> <td>60-80</td> <td>Mildly decreased*</td> </tr> <tr> <td>G3a</td> <td>45-59</td> <td>Mildly to moderately decreased</td> </tr> <tr> <td>G3b</td> <td>30-44</td> <td>Moderately to severely decreased</td> </tr> <tr> <td>G4</td> <td>15-29</td> <td>Severely decreased</td> </tr> <tr> <td>G5</td> <td><15</td> <td>Kidney failure</td> </tr> </tbody> </table> <p>Diabetes causes the blood to become sticky and thick with the excess glucose. This causes arterial stenosis on the efferent arterial of the kidney. Causes obstruction to the blood leaving the glomerulus and build up of pressure damaging the glomerular structure. This causes albumin to be lost, microalbuminuria, which is a sign of CKD. Diabetics also suffer hypertension which increases perfusion and exacerbates this.</p>	GFR categories in CKD			GFR category	GFR (ml/min/1.73)	Terms	G1	≥ 90	Normal or high	G2	60-80	Mildly decreased*	G3a	45-59	Mildly to moderately decreased	G3b	30-44	Moderately to severely decreased	G4	15-29	Severely decreased	G5	<15	Kidney failure
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11. D	<p>Classic Goodpasture syndrome – Anti-GBM destroys alveoli + basement membrane of kidneys Patient will have blood in their airway & urinary tract GGWP ANA – SLE / Scleroderma / Sjogren Ds DNA – Lupus ANCA – vasculitis Anti-ro and anti-la are positive in Sjogrens syndrome</p>																		
12. B	<p>NSAIDs are nephrotoxic → Damage kidney tubules Minimal Change Disease – mainly in kids & young adults – presents with nephrotic syndrome UTI – systemic symptoms + pain. Could have been an answer but option B is the best choice =) Headache Exacerbations – irrelevant.</p>																		
13. E	<p>Complicated UTI's include:</p> <ul style="list-style-type: none"> • Pregnant females • Males • Children • Recurrent UTI's • Elderly people • Patient's with an abnormal urinary tract or systemic disease involving the kidney <p>Therefore the correct answer is E as this is the only option from the selection that is not classed as complicated.</p>																		
14. D	<p>Acute pyelonephritis is infection that is found within the renal pelvis and normally includes the renal parenchyma as well. Therefore the symptoms that are seen are:</p> <ul style="list-style-type: none"> • Fever, rigor, vomiting, loin pain/tenderness, costovertebral pain, associated cystitis pain, septic shock, loss of appetite, headache, oliguria • Pyelonephritis is infection in the kidney, not the prostate and all symptoms seen above are associated with the kidney apart from D. <ol style="list-style-type: none"> a. Loin pain – pain from the infected kidneys b. Severe headache – due to inflammatory response c. Fever – inflammation due to infection d. Incorrect answer 																		

	e. Pyuria – this means pus in the urine and is seen because there is infection in the kidney
15. A	Chlamydia trachomatis is treated with 1g Azithromycin or 100mg doxycycline. Azithromycin is also used with 500mg of ceftriaxone to treat Neisseria Gonorrhoeae. Metronidazole is used to treat Trichomonas Vaginalis. Clotrimazole and Fluconazole are used to treat Genital candidiasis.
16. A	Explanation: A-blockers decrease smooth muscle tone of the prostate and bladder, so are 1 st line treatment in BPH that can be treated by medication. B-blockers are used to treat hypertension, angina, anxiety, heart failure... they inhibit normal sympathetic effects by blocking norepinephrine and epinephrine from binding to beta-adrenoreceptors. 5a-reductase inhibitors can be added to an A-blocker or used alone as the next line of treatment for BPH. It decreases the conversion of testosterone to dihydrotestosterone in the prostate gland, which causes a decrease in the size of the prostate. 3a-reductase inhibitors are made up ACE-inhibitors inhibits the formation of Angiotensin II, causing vasodilation. It is used to treat conditions such as hypertension and heart failure.

Authors – Anna Durkin, Chris Salmon, Suhail Raihan, Paige Wilson

Editor – Chris Salmon csalmon3@sheffield.ac.uk