Acute renal failure

1) An 87-year-old woman is admitted to the hospital with a five-hour history of right low back pain of sudden onset. Warfarin treatment for chronic atrial fibrillation had been stopped one week earlier because of an estimated 1-2 unit bleed into her right gluteous muscle. Serum creatinine during that admission was 1.0 mg/dl. She had had a left nephrectomy for renal cell cancer ten years earlier. She took a number of medications, but no medications known to adversely affect renal function. Examination revealed a blood pressure of 150/80 mmHg, an irregularly irregular pulse of 80-84 beats/minute, and a respiratory rate of 28/minute. Straight catheterization revealed only 10 cc of urine with a few rbcs and wbcs. Serum creatinine was 1.6 mg/dl; LDH was 1027 mg/dl; and serum lactate was elevated at 2.5 mEq/L. Urgent evaluation should focus on:  
a) A search for metastatic renal cell cancer   
b) Imaging tests of renal blood flow   
c) Imaging tests of gastrointestinal blood flow   
d) A search for ureteral obstruction   
e) A search for gram-negative sepsis

2) A 65-year-old diabetic man, a two-pack/day smoker since age eight, was admitted to the hospital because of a slowly expanding abdominal aneurysm. The aneurysm was successfully resected on the second hospital day. Serum creatinine on day one was 1.4 mg/dl (stable). Three days post-op, the serum creatinine (for the first time) was elevated at 1.8 mg/dl. For the next ten to 12 days, the serum creatinine rose by 0.5 – 0.8 mg/dl every two to four days. The urine sediment on several examinations remained bland. The most likely diagnosis is:   
a) Acute tubular necrosis   
b) Atheroembolic disease   
c) Renal vein thrombosis   
d) Acute renal arterial occlusion   
e) Severe congestive heart failure

3) The distinction between acute tubular necrosis (ATN) and pre-renal azotemia (eg volume depletion or congestive heart failure) often is difficult. Which disorder typically has the characteristic cited (choose one in each distractor) :   
a) Urine isosmolar to serum: 1.ATN or 2. Pre-renal Azotemia   
b) Urine sodium concentration <20 mEq/L: 1. ATN or 2. Pre-renal Azotemia   
c) Fractional sodium excretion <1: 1. ATN or 2. Pre-renal Azotemia   
d) “Muddy brown” pigmented casts :1. ATN or 2. Pre-renal Azotemia   
e) More common cause of hospital-acquired: 1. ARF, 2. ATN or 3. Pre-renal Azotemia

4) A 50-year-old man (who smoked one pack of cigarettes/day x 30 years) was admitted with a history of chronic sinusitis, microscopic hematuria and a rapidly rising serum creatinine concentration. Chest x-ray showed a possible cavitary lesion in the right upper lung field. The most likely diagnosis is:   
a) Lung cancer   
b) Pauci-immune rapidly progressive glomerulonephritis   
c) Wegener’s granulomatosis   
d) Macroscopic polyarteritis nodosa   
e) Anti-GBM disease

5) The most important tests to clinically confirm the diagnosis in the patient in question #4 is:   
a) Anti-GBM antibodies   
b) C-and P-ANCA antibodies   
c) C3, C4, and C1q levels   
d) ANA and dsDNA studies   
e) Hepatitis B and C antibody studies

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| --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 |
| b | b | a1,b2,c2,d1,e2 | c | b |

**3) The distinction between acute tubular necrosis and pre-renal azotemia (eg volume depletion or congestive heart failure) often is difficult. Which disorder typically has the characteristic cited:   
a) Urine isosmolar to serum:- ATN Pre-renal Azotemia   
b) Urine sodium concentration <20 mEq/L:- ATN  Pre-renal Azotemia   
c) Fractional sodium excretion <1:- ATN  Pre-renal Azotemia   
d) “Muddy brown” pigmented casts:- ATN Pre-renal Azotemia   
e) More common cause of hospital-acquired:- ARF ATN Pre-renal Azotemia**