Quiz of the Month

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Questions

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History. A 38-year-old auto mechanic with ESRD of unknown cause started in-center hemodialysis 8 months before receiving a living related donor (sister), 2-Dr antigen-matched renal transplant. The mixed lymphocyte culture reactivity against donor cells was 112%, compared to a random panel. The donor was anticytomegalovirus (CMV)-positive (1:80); the recipient was anti-CMV-negative. The postoperative regimen included standard pred-nisone, azathioprine, and cyclosporine immunosuppressive therapy, plus allograft radiation (600 mk × A), aspirin, amlodipine, acyclovir, and prophylactic cytomegalovirus immune globulin (Cytogam®). When, on the 10th postoperative day, serum creatinine rose from 1.9 to 2.4 mg/dl, he underwent renal biopsy and received 3 mg/kg solumedrol daily × 3 days, followed by a standard 10-day course of OKT3 for primary acute rejection. On discharge, his serum creatinine was stable at 2.1 mg/dl. Six weeks later, he presents with low-grade fever, frontal headache, right orbital pain, general malaise, and myalgias of 24 h duration.

Physical Examination. Weight 85 kg, height 6'2", BP 182/108, PI04, R 20, T 38°. Well-developed, well-nourished young man in mild acute distress from frontal headache and right periorbital pain. Optic fundi show grade 1 K-W retinopathy, no hemorrhages or exudates. No nuchal rigidity. The allograft is mildly enlarged and tender to palpation. Trace pedal edema.

Laboratory. Serum Na 139 mmol/l, K 4.2 mmol/l, Cl 98 mmol/l, tC02 23 mmol/l, random glucose 103 mg/dl, BUN 36 mg/dl, creatinine 3.4 mg/dl, total protein 7.2 gm/dl, alb 3.4 g/dl, AST 124, ALT 153, LDH 827, Alk Phos 123, GGPT 87, total bilirubin 0.9 mg/dl.

Urinalysis (performed in office): pH 6.0, sp. gr. 1.014, protein 30 mg/dl, 3-5 RBC/HPF, 4-8 WBC/HPF, 2-4 hyaline casts/LPF, 2-4 fine granular casts/LPF, occ broad, waxy cast/LPF. Protein 32 mg/dl, creatinine Random Spot Urine. 15 mg/dl.

CBC. WBC 3.7, Hb 11.4, Hct 29.6, Pit 244; cell indices, WBC differential, and peripheral smear unremarkable.

Polyclonal, Whole Blood Cyclosporine Level (Sandoz RIA kit): 542 ng/dl (therapeutic range 300-800 ng/dl).

Chest X-Ray. Unremarkable.

Renal USG. No caliectasis or extravasation of urine.

“Tc-DTPA Renal Scintiscan. Prompt uptake of tracer and even distribution of flow, with delayed excretion and radionuclide ‘washout’.

1 What is the most likely cause of the recurrent acuterenal failure?

a Recurrent IgA nephropathy

b CMV interstitial nephritis

- c Recurrent acute rejection
 - d Recurrent focal/segmental glomerulosclerosis
 - e Other
- 2 Which diagnostic test is most important to obtain first?
- a CMV blood culture
 - b Renal biopsy
 - c CMV urine culture
 - d Liver biopsy
 - e MRI of brain and orbits

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- 3 Which diagnostic test is most important to obtain second?
- a CMV blood culture
 - b Renal biopsy
 - c CMV urine culture
 - d Liver biopsy
 - e MRI of brain and orbits
- 4 Given your diagnosis, which course of therapy would you choose?
- a Second course of high-dose corticosteroids
 - b Second course of high-dose corticosteroids followed by a second course of OKT3, if biopsy shows acute rejection with tubulitis/vasculitis and corticosteroids are again ineffective after 3 days
 - c Ganciclovir
 - d a + c
 - e b + c
 - f None of the above
- 5 How reliable (specific, accurate, helpful) is renal biopsy in diagnosing acute rejection?
- a Very
 - b Considerably
 - c Moderately
 - d Modestly
 - e Negligibly
- 6 How reliable (specific, accurate, helpful) is renal biopsy in indicating the proper course of therapy for acute rejection?
- a Very
 - b Considerably
 - c Moderately
 - d Modestly
 - e Negligibly
- 7 How reliable (specific, accurate, helpful) is renal biopsy in diagnosing CMV nephritis?
- a Very
 - b Considerably
 - c Moderately
 - d Modestly
 - e Negligibly
- 8 Would you treat presumed acute rejection with OKT3 in the absence of biopsy-confirmation and histologic grading?
- a Yes
 - b No
- 9 Should CMV-negative recipients be allowed to receive organs from CMV-positive donors, provided they are informed of the risks?
- a Yes, provided adequate antiviral prophylaxis is given
 - b No, never
 - c Only when donor-recipient MLC and HLA typing are highly compatible and the risk of rejection (i.e., excessive immunosuppression) seems acceptably low

d None of the above 10 Should CMV-positive recipients be allowed to receive organs from CMV-positive donors, provided they are informed of the risks?

a Yes, provided adequate antiviral prophylaxis is given

b No, never

c Only when donor-recipient MLC and HLA typing are highly compatible and the risk of rejection (i.e., excessive immunosuppression) seems acceptably low

d Only in LRD transplants when donor and recipient are matched for CMV serotype

e None of the above

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(For answers please see p. 153.)