Meningococcal Disease in a Kidney Transplant Recipient with Mannose-binding Lectin (MBL) Deficiency

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Background: There is an increasing amount of data associating MBL deficiency with a higher susceptibility to meningococcal disease. In addition, meningococcal disease has been reported in patients with various immunosuppressive conditions. However, to our knowledge, only three cases of meningococcal disease have been reported in solid organ recipients (SOT).

Methods & Results: A 32 year-old male patient underwent cadaveric kidney transplantation for end-stage renal disease of unknown origin. On day 71 post-transplantation he developed fever (39.6°C), shaking chills, and tachycardia without hypotension. At this time, immunosuppression consisted of tacrolimus, prednisone 10mg daily and mycophenolate mofetil 2g daily. Physical examination on admission was normal, except for two small petechial lesions on the forearm. No meningeal signs were present. Three sets of blood cultures grew Neisseria meningitidis group C susceptible to ceftriaxone (MIC=0.003mg/l). Antibiotic therapy consisted in intravenous ceftriaxone 2g per day for a total duration of 7 days. Serum immunoglobulin levels, C3, C4 and CH50 were normal. However, using a method to screen for the functional activity of all three pathways of complement (Wieslab, Lund, Sweden), no activation via the MBL pathway could be detected (0%). A subsequent quantification of MBL pathway components revealed normal levels of MASP 2 but undetectable amounts of MBL (below 10 ng/ml, normal range: >500 ng/ml).

Conclusion: Since the exact incidence and the possible relationship between meningococcal disease and organ transplantation is not well understood, we strongly encourage transplantation centers to report additional cases. The potential clinical usefulness of screening SOT candidates for MBL deficiency in relation to infectious complications after transplantation remains to be determined.

Oral Valganciclovir Prophylaxis in Kidney Transplant Recipients

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Background: Immunosuppressive and antiviral prophylactic drugs are needed to prevent acute rejection and infection after organ transplantation. We assessed the effectiveness of a new combined regimen introduced at our transplantation center.

Methods: We reviewed all consecutive patients who underwent kidney transplantation at our institution over a 5.5-year period, with a follow-up of at least 6 months. Patients transplanted from 1/2000 to 3/2003 (Period 1) were compared to patients transplanted from 4/2003 to 7/2005 (Period 2). In period 1, patients were treated with Basiliximab, Ciclosporin, steroids and Mycophenolate or Azathioprine. Prophylaxis with Valaciclovir was prescribed in CMV D+/R- patients; otherwise, a preemptive antiviral approach was used. In period 2, immunosuppressive drugs were Basiliximab, Tacrolimus, steroids and Mycophenolate. A 3-month CMV prophylaxis with Valganciclovir was used, except in D-/R- patients.

Results: Sixty-three patients were transplanted in period 1 and 70 patients in period 2. Baseline characteristics of both groups were comparable; in particular 17% of patients were CMV D+/R- in period 1 compared to 23% in period 2 (p=0.67). Acute rejection was more frequent in period 1 than in period 2 (40% of patients vs 7%, respectively p<0.001). Nineteen patients (30%) in period 1 were diagnosed with CMV infection/disease that required treatment, compared with 8 patients (11.4%) in period 2 (p=0.003). Of these 8 patients, all had CMV infection/disease after discontinuation of Valganciclovir prophylaxis, 6 were D+/R- (75%), and all were treated with oral Valganciclovir. There was no difference between periods in terms of incidence of BK nephropathy, post-transplant lymphoproliferative disease, graft loss, and mortality.

Conclusions: These results indicate that a 3-month course of oral Valganciclovir is very effective to prevent CMV infection/disease in kidney transplantation. Late-onset CMV disease is a residual problem in D+/R- patients receiving VGC prophylaxis.