Successful cost effective prevention of Cytomegalovirus Disease in Kidney Transplant Recipients using low dose Valganciclovir

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OBJECTIVES

Prophylaxis for cytomegalovirus infection is highly recommended for kidney transplant recipients.

Using valgancyclovir in low dose is still under investigation.

Our aim was to assess the cost effectiveness of 450mg valgancyclovir prophylaxis compared with 900mg for kidney transplants.

METHODS

In this prospective trial, 201 kidney transplants were randomized (1:1) to receive 450mg valgancyclovir prophylaxis (group1, n=100) or 900mg daily (group2, n=101) for the first 6months post-transplant. Patients were studied for incidence of CMV disease, leucopenia attacks, rejection episodes and graft outcome and associated costs in one year duration. Direct costs associated with acquisition of immunosuppressive medications, diagnosing rejection, and hospitalizations were included. For each type of rejection (steroid-responsive or resistant), the resources used were categories composed of hospitalization, diagnostic tests, and prescribed drugs used to treat the rejection episode. The cost data from our hospital records and the costs were measured in US dollars.

RESULTS

Demographic features of the studied groups were comparable. More patients have received tacrolimus in group1, while in group2 more patients were maintained on cyclosporine (p0.001).We found that the cost of CVM prophylaxis in patients of group 1 was significantly lower (by 50% at 6 months, p<0.001) with lower leucopenia attacks (p 0.04) and lower doses of granulocyte colony stimulating factor (by 30 % at 6 months, p 0.03) compared to group 2. Higher doses of mycophenolate mofetil (p 0.04) among group 1 patients were protective therefore they experienced less rejection episodes (p0.01).In group2; there were more cytomegalovirus infections requiring full treatment (p0.052) and more BK virus nephropathy (p0.03). Graft and patient outcomes were satisfactory in both groups. Mean estimated glomerular filtration rates were above 60 ml/min at baseline, at 6months and at 12months post-transplant for both groups.

Rejection episodes and their management cost

	Group1(n=100)	Group2(n=101)	P value
Total rejection episodes	16(16%)	29(28.7%)	0.01
Acute T cell mediated rejection	8	9	0.5
Cost of management of acute T cell mediated rejections($)	408	459	0.5
Steroid resistant rejection	3	1	0.37
Cost of management of steroid resistant rejections($)	4275	1425	0.045
Acute antibody mediated rejection (AAMR)	7	8	0.5
Cost of management of AAMR episode($)	17918	17918	0.4
Total cost of AAMR management ($)	125426	143344	
Mixed type rejection(ACR+AAMR)	1	12	0.003
Cost of management of mixed acute rejections ($)	17963	215196	<0.001
Total cost of rejection management ($)	148072	360424	0.02

CONCLUSIONS

Low dose valgancyclovir for cytomegalovirus prophylaxis after renal transplant is safer, effective without breakthrough infection and less costly than using usual dose.

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