Leukopenia Management in Thymoglobulin Treated Renal Transplant Recipients

Lynsey S. Biondi MD
Lehigh Valley Health Network, Lynsey_S.Biondi@lvhn.org

Michael J. Moritz MD
Lehigh Valley Health Network, Michael.Moritz@lvhn.org

Janelle Cyprich
Lehigh Valley Health Network, Janelle.Cyprich@lvhn.org

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Leukopenia Management in Thymoglobulin Treated Renal Transplant Recipients

Lynsey A Biondi, MD, Michael J Moritz, MD and Janelle D Cyprich, Department of Surgery
Lehigh Valley Health Network, Allentown, Pennsylvania

Abstract:

Leukopenia is common following renal transplantation, though it is infrequently reported and lacks well-defined management. We retrospectively reviewed 228 consecutive renal transplant recipients at a single center for leukopenia in the first year following transplant. Leukopenic patients were evaluated for treatment strategies, efficacy, and complications including CMV infection, rejection, graft failure, and death. Leukopenia was observed in 43 of 228 (19%) transplants with median onset and duration of 95 days. Ninety-three percent of patients received treatment for leukopenia including Neupogen®, dose reduction of mycophenolic acid (MPA) or valganciclovir, and initiation of prednisone. Grade 2 neutropenia, defined as ANC<1000 cells/mm³, had statistically significant increased incidence of CMV (p<0.0001), defined as positive serum PCR, and rejection (p=0.013) compared to non-leukopenic patients. MPA dose reductions >50% were associated with a higher rate of CMV (77% v 37%) (p=0.021). Only 4 of 10 had dose reduction prior to the CMV infection. Neutropenic patients also had a statistically significant increase in rejection (p=0.013) compared with non-leukopenic patients. 11/17 (65%) leukopenic patients experienced rejection after treatment of leukopenia.

Results:

Leukopenic patients had significantly lower BMI (p=0.0152) than non-leukopenic patients, but matched in age, gender, transplant type, and PRA. Interventions for leukopenia were not standardized. Severe neutropenic patients had a statistically significant increased incidence of CMV (p<0.0001) compared with non-leukopenic patients. Of the 20 leukopenic patients who developed CMV, 10/20 (50%) developed CMV prior to leukopenia. Compared with full dose valganciclovir, dose reduction was associated with a higher rate of CMV (77% v 37%) (p=0.021). Only 4 of 10 had dose reduction prior to the CMV infection.

Neutropenic patients also had a statistically significant increase in rejection (p=0.013) compared with non-leukopenic patients. 11/17 (65%) leukopenic patients experienced rejection after treatment of leukopenia. While greater degrees of MPA dose reduction resulted in a shorter median duration of leukopenia (110 v 74 days), greater MPA dose reductions were also associated with higher rates of CMV and rejection (see graph).

Conclusions:

1. Leukopenic patients experience significantly increased CMV and rejection.
2. MPA and valganciclovir dose reductions are associated with an increased risk of rejection and CMV.
3. Neupogen® is an effective treatment for leukopenia.

References:

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