Incidence And Onset Of Leukopenia In Adults The First Year After Orthotopic Heart Transplantation

THE UNIVERSITY OF ALABAMA AT BIRMINGHAM

Jose B. Cruz Rodriguez[1,2] | Erwin Argueta[3] | Heriberto Matos Santana[3] | Salpy Pamboukian[2] | Jose Tallaj[2] | Joanna Joly[2] | Andrew Lenneman[2] | Ayman Assad[3] | Charles Hoopes[4] | Allison Hayes[2] | Sabrina Kopf[2] | Indranee Rajapreyar[2]

[1]Division of Cardiovascular Diseases, Texas Tech University Health Sciences Center El Paso TX. [2] Division of Cardiovascular Diseases / Advanced heart failure, University of Alabama at Birmingham
[3] Cardiovascular disease / Advanced heart failure, Texas Tech University Health Sciences Center Lubbock TX [4]Department of Surgery, University of Alabama at Birmingham.

Introduction

There is scarce data regarding risk factors for developing leukopenia early in the course after orthotopic heart transplantation (OHT). The purpose of this study was to examine the incidence, time of onset and risk factors for leukopenia after OHT.

Methods

Retrospective cohort study on adult patients following OHT from 2012 to 2017 at our institution. Patients were followed for a year with the initial episode of leukopenia (total white blood cell count<4,000 cells/mm3) being the incident event. Outcomes of interest were incidence, time to event and risk factors of leukopenia. Time to event Kaplan-Meier method, and Cox-proportional hazard models were used.

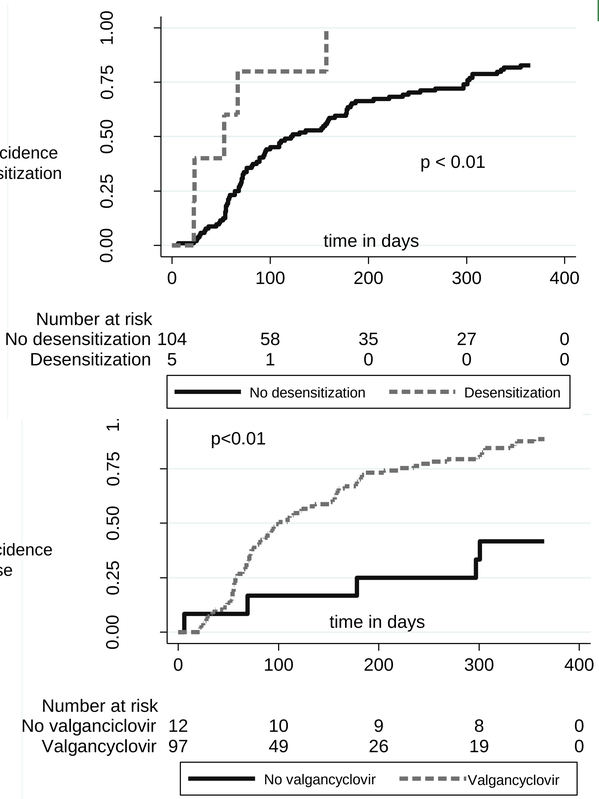

Figure 1. Cumulative incidence of leukopenia by desensitization group.

Figure 2. Cumulative incidence of leukopenia by VCG use

Results

- Analytic sample was 109 patients. Total of 91 patients (83.5%) developed leukopenia in the follow up period.
- Median time to leukopenia was 89 days (IQR 56-178 days).
- Patients who developed leukopenia had a higher proportion of donor positive CMV, but no CMV mismatch; higher daily dose of corticosteroids and higher proportion regimens containing valganciclovir (VGC, 95% vs 61%, p<0.01).
- Patients who had a desensitization regimen had shorter median time to leukopenia (53 vs 121 days, p<0.01).
- We found no difference in the incidence of rejection and incidence or type of infections.
- After adjusting for immunosuppression, infection prophylaxis and induction regimen, patients with desensitization had increase hazard of leukopenia during the first year (HR= 3.59, 95CI 1.40-9.17, p=0.008).
- In multivariable analysis, patients taking any regimen containing VGC had increased risk of developing leukopenia during the study period.

Conclusion

- Leukopenia was identified in 83.5% of adult patients, during the first year after OHT.
- Risk factors for leukopenia were donor CMV status, and medication combinations used to prevent rejection and opportunistic infections.
- Regimens that included VGC and desensitization regimens prior to transplant were identified as higher risk for developing a leukopenic event.