

Abstract

Background: Human Leukocyte Antigen (HLA) antibodies are produced by the immune system when exposed to allogeneic tissue, typically through pregnancy, transfusion, or transplant. Relationships have been established between multiple exposures and greater HLA antibody production, but other factors which may predispose an individual to greater HLA antibody production, such as blood type, have yet to be explored.

Study design and Methods: We analyzed the blood types and calculated panel reactive antibody (cPRA) values of patients in bone marrow transplant (BMT) and kidney transplant populations. Blood type frequencies were compared by chi-squared testing, and the cPRA values of the kidney transplant and BMT groups were compared by t-testing.

Results: In the kidney transplant population, a lower percentage of blood type A and a higher percentage of blood type AB was seen in patients who had cPRA values of 30 or more. A decreased percentage of blood type A was also seen in patients who had a positive cPRA. In the BMT population, a lower percentage of blood type O was seen in patients who had a positive cPRA.

Conclusion: Blood type A is less common in kidney transplant patients with higher cPRA values, while blood type AB is more common. Although it is not clear why this relationship was not also seen in the BMT population, this could be due to differences in antigen exposure.