**Evaluating the relationship between weight-based mycophenolate dosing and rejection within the first year after heart transplant at VCU Health System**

**Authors:** Ryan Marks, PharmD; Ryan Winstead, PharmD, BCPS

**Practice Site:** Virginia Commonwealth University Health System; Richmond, VA

**Background:** Mycophenolate is commonly used as part of maintenance immunosuppressive regimens after a solid organ transplant to prevent organ rejection. Adverse effects such as leukopenia, gastrointestinal distress, and infections are often dose-dependent which leads to dose reductions, interruptions, or discontinuation. These frequent dose changes lead to increased risk of rejection and allograft failure. Current clinical practice guidelines recommend a fixed dosing regimen of 1500 mg twice daily, but this strategy does not address large variations in patient body weight which can lead to over or under immunosuppression. Therefore, weight-based mycophenolate dosing may be used to prevent rejection and decrease the rate of adverse effects. Currently, this dosing strategy has not been evaluated in heart transplant patients.

**Objective:** The goal of this study was to evaluate the risk of rejection and other post-transplant outcomes based on weight-based dosing of mycophenolate in heart transplant patients at VCU Health System. The primary outcome was the relationship between weight-based mycophenolate dosing and biopsy-proven rejection within 1 year of heart transplant. Secondary outcomes included the relationship between weight-based mycophenolate dosing and platelet count, white blood cell count, hospitalizations, and treated infections.

**Methods:** This study was a single center, retrospective case-control study of VCU Health System heart transplant patients who received a transplant between January 1, 2010 and December 31, 2020. Eligible patients had to be at least 18 years of age received a heart transplant at VCU Health System between January 1, 2010 and December 31, 2020. 56 patients, 28 with biopsy-proven rejection and 28 without biopsy proven rejection within 1 year post transplant, eligible for inclusion were identified through chart review, and data collection was completed using the REDCap database. Statistical analysis was performed using JMP ® 16.1 statistical software .

**Preliminary Results:** The primary outcome is a logistic regression analysis of the effect of mycophenolate dose on incidence of biopsy-proven acute rejection within one year post-transplant. Secondary outcomes are the number of dose reductions of mycophenolate, mean mycophenolate dose, mean white blood cell count at specific intervals, adverse effects leading to dose reductions, hospitalizations, treated infections, graft loss, and death.

**Conclusion:** The personal ask method, when compared to a bag stuffer, was a more effective method to administer the PHQ-9 questionnaire. We believe that the interview method will have at least similar response rate to the personal ask method, however it does involve more time spent by the pharmacist. Administration of the PHQ-9 in an independent, community pharmacy was successful, is able to be implemented into workflow, and increases access to care for patients.