Background

Mycophenolate mofetil (MMF) is an immunosuppressant used to prevent organ rejection in pediatric kidney transplant patients. MMF dosing can be assessed with mycophenolic acid (MPA) trough concentrations or limited sampling strategies (LSS).

Objectives

Primary objectives:
- Describe the relationship between AUC estimated via LSS and adverse effects of MMF in pediatric kidney transplant patients.

Secondary objectives:
- Compare clinical outcomes between MMF therapeutic monitoring practices (LSS vs. trough concentrations).
- Describe the relationship between AUC estimated via LSS and rejection (renal biopsy confirmed).

Methods

- Design: Retrospective chart review.
- Clinical research ethics board approved.
- Population: Kidney transplant patients who received MMF at BC Children’s Hospital (BCCH) and had at least one MPA plasma concentration from September 2013 to October 2016.
- Inclusion: 2-20 years old inclusive who had at least 1 interpretable MPA plasma concentration drawn at steady state.
- Exclusion: Receiving mycophenolate sodium.
- Statistics: Descriptive statistics.
- Naranjo scores were used to determine likelihood of adverse effect being associated with MMF.

Table 1: Baseline Characteristics

<table>
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<th>N=33</th>
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<tbody>
<tr>
<td>Age (mean) at time of TDM (+ SD)</td>
<td>14.7 ± 4.5 years</td>
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<tr>
<td>Male, N (%)</td>
<td>19 (58)</td>
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<tr>
<td>Type of Therapeutic Drug Monitoring, N (%)</td>
<td></td>
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<tr>
<td>Limited sampling strategy sets</td>
<td>12 (12)</td>
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<tr>
<td>Trough concentrations</td>
<td>91 (88)</td>
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<tr>
<td>Mean MMF dose/BSA (+ SD)</td>
<td>448.6 ± 118.9 mg/m²</td>
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Adverse Effects (AE)

- MPA AUC estimated by limited sampling strategy, and trough concentrations of MPA did not appear to be associated with occurrence of AEs or rejection.
- In light of these data, the utility of measuring MPA trough concentrations and LSS should be reassessed.
- Therapeutic drug monitoring may have been done more frequently in context of clinical suspicion of AE or rejection which may confound the results.
- Confounders may exist which were not accounted for.
- The sample size was smaller than anticipated and thus we were unable to perform the multivariate analysis that was planned.

Conclusion

- MPA AUC estimated by limited sampling strategy, and trough concentrations of MPA did not appear to be associated with occurrence of AEs or rejection.
- In light of these data, the utility of measuring MPA trough concentrations and LSS should be reassessed.