Postoperative NSAID use and Incidence of Renal Failure in Cardiac Surgery (NIRF)

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Methods

Objective

- To evaluate the possible association between post-operative NSAID use and composite renal risk, injury, and failure in cardiac surgery patients at RCH within 14 days post-operation, or at earlier discharge

Exclusion

- Pre-existing renal disease
- Stage III, IV, V renal disease (KDOQI* criteria), dialysis
- Shock prior to surgery requiring inotropes or vasopressors
- Peri-operative Intra-Aortic Balloon Pump (IABP) use
- Cardiac catheterization within 48 hours of surgery

Outcome

- Composite of renal risk, injury, failure, dialysis

Statistical Analysis

- Estimated sample size (N=782) to show odds ratio (OR) of 1.5 assuming 55% exposure rate in control group
- Characteristic differences calculated with Chi-square analysis
- Association between NSAIDs and renal impairment evaluated using logistic regression

Results

- 1320 patients screened
- 386 patients included to date

Outcomes

<table>
<thead>
<tr>
<th>NSAIDs</th>
<th>No Renal Impairment (N=224)</th>
<th>Renal Impairment (N=162)</th>
<th>Odds Ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indomethacin</td>
<td>71.0%</td>
<td>50.6%</td>
<td>0.42 (0.28-0.64)</td>
</tr>
<tr>
<td>Ibuprofen</td>
<td>69.2%</td>
<td>52.5%</td>
<td>0.49 (0.32-0.75)</td>
</tr>
<tr>
<td>Naproxen</td>
<td>0.9%</td>
<td>0</td>
<td>NS</td>
</tr>
<tr>
<td>Any NSAIDs</td>
<td>80.8%</td>
<td>67.3%</td>
<td>0.57 (0.45 – 0.74)</td>
</tr>
</tbody>
</table>

- Inability to adjust for unknown confounders
- No significant associations between renal impairment and gender, age, surgery type, diabetes, fluid balance in OR, ACEI use, or ARB use

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