Decrease Blood Loss in Total Knee Replacement with Topical Tranexamic Acid

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Introduction

• Total knee arthroplasty
  – high transfusion rate of 11-21%

• Tranexamic acid
  – anti-fibrinolytic agent
  – controlling bleeding in various surgical situations
  – studies have proven its efficacy and safety

• Purpose
  – to investigate the effect of intra-articular tranexamic acid injection in primary TKA
Methology

- **Retrospective** study
  - from July 2015 to Sep 2016 in Poh Oi Hospital
  - 296 patients recruited

- Transexamic acid (TA) group (n=154)
  - intraarticular administration of **1.5 gram tranexamic acid** after closure of arthrotomy

- Control group (n=142)
  - all TKR patients six months before the implementation

- Same exclusion criteria to both groups
### Results

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Tranexamic acid</th>
<th>Control</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hb drop (gm/dL)</td>
<td>2.78</td>
<td>3.62</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Transfusion rate</td>
<td>5/154 (3.2%)</td>
<td>34/142 (23.9%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Length of stay (days)</td>
<td>9.1</td>
<td>11.2</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Drain output (ml)</td>
<td>199</td>
<td>276</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>
Conclusion

• This study supports the use of topical tranexamic acid in reducing blood loss in total knee arthroplasty.

• We consider this technique to be safe and efficient to our patients undergoing total knee arthroplasty.