Flush Now: The Use of Technology to Prevent Occlusions in Jejunal Feeding Tubes — A Pilot Evaluation

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Citation

Introduction
The provision of water flushes and hydration via the enteral route requires a patient-specific intervention, delivery mechanism, and prescription compliance. Inadequate water delivery may lead to feeding tube occlusion, fluid imbalance, and nutritional insufficiency. This evaluation aimed to assess the ability of the Kangaroo™ ePump system (Cardinal Health, Mansfield, MA, USA) to deliver water flushes, with the ultimate goal of helping to avoid occlusions in jejunal feeding tubes and improving nursing workload.

Methods
The current facility enteral flushing protocol via jejunal feeding tubes includes up to 10 flushes per day after feeding, residual check, or medication. Flushes were delivered manually via a syringe or automatically using the Kangaroo™ ePump system for a sample of patients.

Results
Utilizing manual flushing, 57% of jejunal tubes became occluded, of which only 42% could be reopened (Table 1). Conversely, using automatic pump flushing, none of the jejunal tubes were occluded (Table 1).

Table 1. Comparison of flush method on occlusions and reopenings

<table>
<thead>
<tr>
<th>Flush method</th>
<th>Jejunal tubes</th>
<th>Occlusions (%)</th>
<th>Reopening time</th>
<th>Failed reopenings (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual</td>
<td>21</td>
<td>12 (57%)</td>
<td>15 - 90 min</td>
<td>7 (58%)</td>
</tr>
<tr>
<td>Automatic pump</td>
<td>9</td>
<td>0 (0%)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Over the course of 1 year (10 patients per nurse per day, each receiving 4 flushes per day), manual syringe flushing (2 minutes per flush) versus automatic pump flushing (1 minute per flush) consumes more staffing hours (486.6 versus 243.3) and nursing time cost (€16,398 versus €8,199) than an automatic pump, respectively.

Conclusion
In this limited analysis, automatic pump delivery of enteral water flushes and hydration eliminated jejunal feeding tube occlusions on a hospital ward. The use of technology to deliver water flush orders may reduce nursing time and improve nursing efficiency.

References

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