The effect of Gabapentin premedication on postoperative pain management after abdominal hysterectomy

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Background and goal of study:
This prospective randomized, double-blind placebo-control study was designed to investigate if oral premedication with gabapentin, primarily an anticonvulsant drug that demonstrated also antihyperalgesic properties, could improve the postoperative pain control after abdominal hysterectomy via Pfannenstiel incision.

Materials and Methods:
Preoperatively, 1200mg oral Gabapentin

64 Women ASA I-III

Preoperatively, oral PLACEBO

GROUP G
N=30

GROUP P
N=34

General anaesthesia for abdominal hysterectomy

Postoperative analgesia: PCA with iv Morphine (1mg bolus, 5min lockout interval, 8mg limit in 1h)
iv Paracetamol 1g/6h

Parameters evaluated during first 48h postoperatively: pain at rest and on coughing; total morphine consumption; length of pain-free interval; incidence of sedation and nausea/vomiting; patient satisfaction with analgesic regimen.

Results and discussions:
The two groups revealed no difference in demographics, anaesthesia, duration and technique of surgery.

<table>
<thead>
<tr>
<th>Group</th>
<th>VAS at 1h</th>
<th>VAS at 2h</th>
<th>VAS at 4h</th>
<th>VAS at 8h</th>
<th>VAS at 24h</th>
<th>VAS at 48h</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROUP G</td>
<td>0.56±0.51</td>
<td>0.88±0.57</td>
<td>1.29±0.89</td>
<td>1.74±1.44</td>
<td>2.17±1.25</td>
<td>2.05±1.82</td>
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<tr>
<td>GROUP P</td>
<td>0.84±0.78</td>
<td>1.02±0.85</td>
<td>1.94±0.75</td>
<td>2.28±1.62</td>
<td>2.86±1.58</td>
<td>2.26±1.73</td>
</tr>
<tr>
<td>p</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
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<td>NS</td>
</tr>
</tbody>
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Fig.1: Evaluation of pain intensity at rest during study period (VAS)

According to our findings, no significant difference was detected between group G and placebo regarding pain intensity at rest, the improvement in pain scores due to gabapentin being modest. The analgesic efficiency of gabapentin appeared highly significant on coughing, since VAS scores were impressively less for group G versus group P.

The antinociceptive, antihyperalgesic and anti-inflammatory effects of gabapentin in states of surgically-induced acute tissue and nerve injury could be a pertinent explanation for this distribution.

Concerning total morphine consumption, a significant reduction in opioid requirement delivered by PCA was found in group G versus group P, explained by gabapentin morphine-sparing effect. Although the duration of pain-free interval was similar in our groups, the advantage of gabapentin premedication was highlighted by the quality of analgesia achieved.

Conclusions:
Gabapentin premedication controls efficiently the acute pain, especially on coughing, decreases considerably morphine consumption by PCA and the incidence of correspondent side-effects, thus improving patient status and the quality of recovery during first 48h after abdominal hysterectomy.

References: