The Effect of Pre-Operative Opioid Use on Outcome Scores and Post-Operative Opioid Use after ACL Reconstruction

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Disclosures
Background

• Pre-operative opioid use associated with:
  – Prolonged post-op use
    • RCR\(^1\), ACLR\(^2\), THA\(^3\), TKA\(^4\)
  – Inferior post-op outcome scores
    • Arthroplasty\(^5,6\), spine surgery\(^7\), hip arthroscopy\(^8\)
  – Up to 35% of patients undergoing ACLR have pre-op use\(^2\)
Pre-Op Opioid Use

- Effect of tolerance - more difficult to treat post-op pain
- Opioid induced hyperalgesia
Purpose

• Investigate whether pre-operative opioid use has an adverse effect on outcomes after ACL reconstruction.
Methods

- Institution prospective ACL registry between 4/2012 and 1/2016
  - KOOS and WOMAC outcome scores pre-operatively as well as at 6 months and 2 years post-operatively
  - Patients who underwent subsequent procedures or revision surgery were excluded, n= 45.
  - Retrospective chart review
    - Document pre-operative opioid use
    - still using opioid pain medication at two week and 6 week post-operative visit
  - Univariate analysis was carried out to identify statistically significant changes as well as minimal clinically important differences in outcome scores.
Results

- N=157 @ 2 and 6 weeks, 1 yr, 2 yr
- The incidence of pre-operative opioid use =14.6% (N = 23)
  - Post-operative opioid pain medication higher in pre-operative uses
    - 2 weeks (47.8% vs. 32.1%, p = 0.14)
    - 6 weeks (17.4% vs. 5.2%, p = 0.06)
  - 27% reoperation rate in the pre-op users, 29% in the non-users
Results

• Outcome scores were higher for all scales and at all time points for patients who were not using opioid pre-operatively, however these did not all reach minimal clinically important differences.

• Both groups had a significant change in outcome scores between their pre-op scores and 6 month and 2 year post op scores. There was no significant difference in the amount of change in outcome scores at these time points between the pre-operative users and non-users.

<table>
<thead>
<tr>
<th></th>
<th>KOOS ADL</th>
<th>KOOS Pain</th>
<th>KOOS QOL</th>
<th>KOOS Sport</th>
<th>KOOS Symptom</th>
<th>WOMAC Pain</th>
<th>WOMAC Stiffness</th>
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</thead>
<tbody>
<tr>
<td><strong>Pre Op</strong></td>
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<tr>
<td>Users</td>
<td>63.77 ± 18.03</td>
<td>61.15 ± 18.02</td>
<td>27.99 ± 22.72</td>
<td>20.87 ± 21.72</td>
<td>57.92 ± 18.14</td>
<td>71.74 ± 16.83</td>
<td>59.78 ± 19.2</td>
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<tr>
<td>Non-Users</td>
<td>74.83 ± 16.37</td>
<td>66.74 ± 18.02</td>
<td>37.82 ± 21.84</td>
<td>30.75 ± 23.84</td>
<td>59.69 ± 16.96</td>
<td>78.11 ± 17.87</td>
<td>65.21 ± 20.7</td>
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<td><strong>6 months</strong></td>
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<tr>
<td>Users</td>
<td>90.79 ± 13.91</td>
<td>84.78 ± 14.86</td>
<td>62.14 ± 15.76</td>
<td>65 ± 21.21</td>
<td>76.4 ± 18.52</td>
<td>90.43 ± 14.14</td>
<td>73.37 ± 22.7</td>
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<tr>
<td>Non-Users</td>
<td>95.07 ± 7.56</td>
<td>88.98 ± 9.88</td>
<td>65.55 ± 18.08</td>
<td>66.96 ± 19.92</td>
<td>81.55 ± 12.15</td>
<td>94.74 ± 8.32</td>
<td>83.3 ± 15.93</td>
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<td><strong>2 years</strong></td>
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<tr>
<td>Users</td>
<td>91.42 ± 16.27</td>
<td>84.42 ± 17.32</td>
<td>67.66 ± 22.51</td>
<td>73.26 ± 25.83</td>
<td>75.78 ± 17.29</td>
<td>88.91 ± 17.32</td>
<td>78.26 ± 21.72</td>
</tr>
<tr>
<td>Non-Users</td>
<td>96.15 ± 7.03</td>
<td>90.85 ± 10.8</td>
<td>74.72 ± 20.92</td>
<td>81.62 ± 19.37</td>
<td>84.36 ± 13.9</td>
<td>94.44 ± 9.41</td>
<td>86.29 ± 16.36</td>
</tr>
</tbody>
</table>

Bold = MCID and statistically significant
Conclusions

• 14.6% of our patients undergoing ACL reconstruction were using opioids prior to surgery.
• Preoperative opioid users had increased postoperative use at 2 and 6 weeks following surgery, but not statistically significant.
• Patients who had pre-operative opioid use had lower PROs at all time points compared those who did not use opioids before surgery, yet not all of these data points met MCID.
• Preoperative opioid use may not only predict prolonged postoperative use but may have deleterious effects on outcomes after surgery.
References


