PREOPERATIVE PERFORMANCE OF PROMIS IN PATIENTS WITH PATELLOFEMORAL MALALIGNMENT AND CHONDRAL DISEASE

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DISCLOSURES

Christopher N. Carender, MD
Nothing to disclose

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Nothing to disclose

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INTRODUCTION

- Patellofemoral malalignment often associated with chondral disease
- Patient Reported Outcomes Measurement Information System (PROMIS) not previously validated in patients with patellofemoral malalignment and chondral disease
PURPOSE

• Investigate the PROMIS Physical Function Computer Adaptive Test (PROMIS PF CAT) instrument in patients undergoing patellar realignment surgery with concomitant cartilage procedures

• Compare performance of PROMIS PF CAT to established PRO instruments
METHODS

• Eligible patients were prospectively enrolled at the time of indication for surgery and completed five PRO instruments preoperatively
  • SF-36, WOMAC, Marx Activity scale, EQ-5D-5L, and PROMIS PF CAT
  • Strength of correlation was measured using Spearman correlation coefficients (r)
  • Floor and ceiling effects examined
37 patients (40 knees) enrolled in study

Patients underwent tibia tubercle osteotomy and concomitant cartilage procedure

- 29 chondroplasty
- 6 juvenile particulated allograft
- 5 microfracture

Mean age 33.4 ± 11.1 years

73% female
RESULTS

- PROMIS PF CAT: mean of 5.6 ± 0.6 items administered
- High to high-moderate correlations were observed between PROMIS PF CAT and the majority of the knee PRO instruments studied
RESULTS

- Spearman’s rank correlation coefficients ($r$) between PROMIS PF CAT and the established knee PRO instruments

<table>
<thead>
<tr>
<th>Instrument</th>
<th>r value</th>
<th>p value</th>
<th>Strength of Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF-36 PF*</td>
<td>0.80</td>
<td>&lt;0.01</td>
<td>High</td>
</tr>
<tr>
<td>KOOS Pain</td>
<td>0.74</td>
<td>&lt;0.01</td>
<td>High</td>
</tr>
<tr>
<td>KOOS Symptoms</td>
<td>0.47</td>
<td>&lt;0.01</td>
<td>Moderate</td>
</tr>
<tr>
<td>KOOS QOL</td>
<td>0.68</td>
<td>&lt;0.01</td>
<td>High-moderate</td>
</tr>
<tr>
<td>KOOS Sports*</td>
<td>0.72</td>
<td>&lt;0.01</td>
<td>High</td>
</tr>
<tr>
<td>KOOS ADL*</td>
<td>0.80</td>
<td>&lt;0.01</td>
<td>High</td>
</tr>
<tr>
<td>WOMAC Function</td>
<td>0.80</td>
<td>&lt;0.01</td>
<td>High</td>
</tr>
<tr>
<td>WOMAC Pain</td>
<td>0.72</td>
<td>&lt;0.01</td>
<td>High</td>
</tr>
<tr>
<td>WOMAC Stiffness</td>
<td>0.38</td>
<td>0.02</td>
<td>Moderate-weak</td>
</tr>
<tr>
<td>Marx Activity Scale</td>
<td>0.22</td>
<td>0.31</td>
<td>Weak</td>
</tr>
<tr>
<td>EQ-5D-5L</td>
<td>0.72</td>
<td>&lt;0.01</td>
<td>High</td>
</tr>
</tbody>
</table>

*denotes that PRO instrument examines physical function.
RESULTS

- Floor and ceiling effects in PROs measuring Physical Function

<table>
<thead>
<tr>
<th>Instrument</th>
<th># items</th>
<th>Floor (n, %)</th>
<th>Ceiling (n, %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROMIS PF CAT</td>
<td>5.6 ± 0.6</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>SF-36 PF</td>
<td>10</td>
<td>1 (2.2%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>KOOS Sports</td>
<td>5</td>
<td>0 (0.0%)</td>
<td>8 (20.0%)</td>
</tr>
<tr>
<td>KOOS ADL</td>
<td>17</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
</tr>
</tbody>
</table>
DISCUSSION

• PROMIS PF CAT correlated well (high or high-moderate correlation) with all PRO instruments with the exception of KOOS Symptoms, WOMAC Stiffness, and Marx Activity

• PROMIS PF CAT is an efficient and reliable PRO instrument to assess patients across a spectrum of knee function without floor or ceiling effects
LIMITATIONS

• Study population was limited to patients with patellofemoral chondral lesions and malalignment
  • Cannot be generalized to patients with patellofemoral instability or other patellofemoral pathology
• Unable to assess the performance of PROMIS PF CAT against Kujala scores, a previously validated PRO specific to patellofemoral pathology
CONCLUSION

• PROMIS PF CAT
  • More efficient and consistent assessment of patients compared with previously established PRO instruments
  • Maintains a high degree of correlation to said instruments

THANK YOU
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REFERENCES


