Effect of Age and Sex on Achieving Meaningful Clinical Outcomes at Minimum 5-years after Hip Arthroscopy for Femoroacetabular Impingement: A Comparative Matched-Group Analysis

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I (and/or my co-authors) have something to disclose.

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Background

• Non-modifiable factors, including age and sex, have been shown to affect outcomes following hip arthroscopy in patients with FAIS at short-term follow-up.

• Few medium- or longer-term follow-up studies have reported the rates of achieving meaningful clinical outcomes.

• There is a need to evaluate the impact of age and sex on long-term meaningful clinical improvement.
Objective

To compare rates of achieving minimum clinically important difference (MCID) and the patient acceptable symptomatic state (PASS) at a minimum 5-years after hip arthroscopy for FAIS, by age and sex.
Study Criteria

Inclusion Criteria
- Patients diagnosed with FAIS
- Failure of conservative management
- Primary hip arthroscopy
- Minimum 5-year follow-up

Exclusion Criteria
- Non-FAIS indications for hip arthroscopy
- Hip dysplasia (LCEA<20°)
- Congenital hip disorders
- Osteoarthritis (Tonnis grade >1)
Patient Selection

25 patients categorized into each of the following groups (150 total):

- Females
  - < 30 y.o.
  - 30-45 y.o.
  - > 45 y.o.

- Males
  - < 30 y.o.
  - 30-45 y.o.
  - > 45 y.o.
Methods

- Data collected at baseline and 5 years post-operatively from consecutive patients undergoing hip arthroscopy to treat FAIS by the senior author:

  - Hip Outcome Score–Activities of Daily Living (HOS-ADL)
  - HOS–Sports Subscale (HOS-SS)
  - Modified Harris hip score (mHHS)
  - Visual Analog Scale (VAS) Pain
  - VAS Satisfaction

- MCID, SCB and PASS were calculated for each PRO
Methods

- Independent samples t-test compared difference in continuous variables between male and female patients.

- One-way ANOVA compared differences between the 3 age categories with Tukey post-hoc analysis to determine differences among each category.

- Chi-square analysis compared binomial variables, including MCID and PASS, between sex and age categories.
Results

Postoperative Functional Outcomes by Sex

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCID</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HOS-ADL</td>
<td>35(53.8%)</td>
<td>47(67.1%)</td>
<td>0.114</td>
</tr>
<tr>
<td>HOS-SS</td>
<td>29(48.3%)</td>
<td>42(58%)</td>
<td>0.008</td>
</tr>
<tr>
<td>mHHS</td>
<td>33(54%)</td>
<td>49(75.4%)</td>
<td>0.012</td>
</tr>
<tr>
<td>Any MCID</td>
<td>48(72.7%)</td>
<td>62(84.9%)</td>
<td>0.077</td>
</tr>
<tr>
<td>PASS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HOS-ADL</td>
<td>48(64%)</td>
<td>50(66.7%)</td>
<td>0.731</td>
</tr>
<tr>
<td>HOS-SS</td>
<td>39(56.5%)</td>
<td>45(70.3%)</td>
<td>0.099</td>
</tr>
<tr>
<td>mHHS</td>
<td>40(55.6%)</td>
<td>47(66.2%)</td>
<td>0.192</td>
</tr>
<tr>
<td>Any PASS</td>
<td>54(72%)</td>
<td>54(72%)</td>
<td>0.999</td>
</tr>
</tbody>
</table>
### Results

#### Postoperative Functional Outcomes by Age Category

<table>
<thead>
<tr>
<th>Measure</th>
<th>&lt;30 Yrs</th>
<th>30-45 Yrs</th>
<th>&gt;45 Yrs</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOS-ADL</td>
<td>29(64.4%)</td>
<td>29(67.4%)</td>
<td>24(51.1%)</td>
<td>0.233</td>
</tr>
<tr>
<td>HOS-SS</td>
<td>31(70.5%)</td>
<td>23(56.9%)</td>
<td>17(48.6%)</td>
<td>0.14</td>
</tr>
<tr>
<td>mHHS</td>
<td>31(70.5%)</td>
<td>25(59.5%)</td>
<td>26(65%)</td>
<td>0.568</td>
</tr>
<tr>
<td>Any MCID</td>
<td>40(86.9%)</td>
<td>36(80%)</td>
<td>34(70.8%)</td>
<td>0.115</td>
</tr>
</tbody>
</table>

#### Rates of Achieving MCID/PASS

<table>
<thead>
<tr>
<th>Measure</th>
<th>&lt;30 Yrs</th>
<th>30-45 Yrs</th>
<th>&gt;45 Yrs</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOS-ADL</td>
<td>40(80%)</td>
<td>31(62%)</td>
<td>27(54%)</td>
<td>0.02</td>
</tr>
<tr>
<td>HOS-SS</td>
<td>37(74%)</td>
<td>26(55.3%)</td>
<td>21(58.3%)</td>
<td>0.127</td>
</tr>
<tr>
<td>mHHS</td>
<td>36(75%)</td>
<td>25(51%)</td>
<td>24(48.9%)</td>
<td>0.041</td>
</tr>
<tr>
<td>Any PASS</td>
<td>41(82%)</td>
<td>34(68%)</td>
<td>33(63%)</td>
<td>0.152</td>
</tr>
</tbody>
</table>
Conclusions

• A large majority of patients undergoing primary arthroscopic treatment for symptomatic FAIS achieve meaningful clinical success at minimum 5-year follow-up.

• **Females** reach the mHHS threshold for achieving MCID at significantly higher rates than males and trend toward higher rates of **MCID achievement on any outcome tool**.

• Patients < 30 y.o. achieve PASS on the HOS-ADL and mHHS threshold scores at higher rates than those > 45 y.o.
Thank you