An evaluation of retrospective outcome scores in elective foot and ankle surgery

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Our disclosure is in the Final AOFAS Mobile App. We have no potential conflicts with this presentation.
Introduction

- Patient reported outcome measures (PROMs) are used to evaluate the quality of care from patients perspective
- AOFAS rating scores, Foot Function Index, SF-12...
- Retrospective scoring is yet to be validated
- Toolan et al (2001) evaluated retrospective AOFAS rating scores
  - “poor predictor... may overestimate benefit of surgery”
- Potential to greatly simplify data collection

B Toolan et al, An evaluation of the use of retrospectively acquired preoperative AOFAS clinical rating scores to assess surgical outcome after elective foot and ankle surgery. Foot Ankle Int. 22 (10): 775-778, 2001
Foot Function Index

- Budiman-Mak et al 1991, revised 2006
- Measure of foot pathology on function
- Rheumatoid arthritis original population
- 23 visual analogue scales
  - 9 related to pain
  - 9 related to difficulties
  - 5 related to limitations


Budiman-Mak E, Conrad K, Stuck R, Matter M. Theoretical model and Rach analysis to develop a revised Foot Function Index. Foot Ankle Int. 27 (7); 519-527, 2006.
SF 12 Health Survey

- Ware et al 1996
- Subset of items from Medical Outcomes Study Short Form 36
- Generic health related quality of life tool
- Aims to cover
  - Physical and social functioning
  - Bodily pain and vitality
  - General and mental health

Aims

• To compare preoperative and retrospective outcome scores with regards to correlation and accuracy
Methods

- 36 patients underwent elective foot and ankle procedures
- PROMs preoperatively and retrospectively at three months (av follow up 139 days)
- Both SF 12 and FFI used
- Results analyzed with excel
Results

• 36 patients (average age 54.6yrs)
• 15 hindfoot; 21 forefoot procedures
• 2 patients (5.65%) recalled identical SF 12
• No identical FFI scores recorded

<table>
<thead>
<tr>
<th>PROM</th>
<th>Pre operative score (Av.)</th>
<th>Retrospective score (Av.)</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF 12</td>
<td>29.9</td>
<td>29.4</td>
<td>-0.6</td>
</tr>
<tr>
<td>FFI</td>
<td>103.1</td>
<td>135.1</td>
<td>34.7</td>
</tr>
</tbody>
</table>
Retrospective scores

SF 12

Recalled score at 3 months

Pre Operative

\( \rho = 0.48 \)

FFI

Recalled score at 3 months

Pre Operative

\( \rho = 0.81 \)
# Regression analysis

<table>
<thead>
<tr>
<th>PROM % difference</th>
<th>Variable</th>
<th>Correlation (r)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SF 12</strong></td>
<td>Time to retrospective score</td>
<td>0.30</td>
</tr>
<tr>
<td></td>
<td>3 month post op score</td>
<td>-0.10</td>
</tr>
<tr>
<td><strong>FFI</strong></td>
<td>Time to retrospective score</td>
<td>-0.05</td>
</tr>
<tr>
<td></td>
<td>3 month post op score</td>
<td>-0.28</td>
</tr>
</tbody>
</table>

## Graphs

- **SF 12**
  - Graph showing % difference against 3 month score / days to recall.
  - Linear relationship indicated.

- **FFI**
  - Graph showing % difference against 3 month score / days to recall.
  - Linear relationship indicated.
Forefoot vs Hindfoot

% difference between original & recalled scores

SF12: 
- Forefoot: -2.5
- Hindfoot: 1

FFI: 
- Forefoot: 53
- Hindfoot: 25.2

Combined: 
- Forefoot: 26.8
- Hindfoot: 13.5

p = 0.08
Conclusion

• SF 12 more accurately recalled than FFI (p < 0.001)
• Both exhibit moderate (SF 12) to strong (FFI) correlation with recalled scores
• No statistical influence from;
  – Time to retrospective score
  – 3 month PROM score
• Forefoot patients exhibit less retrospective accuracy than hindfoot patients
• Patients tend to recall symptoms worse than previously recorded
  – Especially those undergoing forefoot surgery