PREOPERATIVE PREDICTORS OF 16-YEAR ACCEPTABLE KNEE FUNCTION AND OSTEOARTHRITIS AFTER ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION
– AN ANALYSIS BASED ON 147 PATIENTS FROM TWO RANDOMISED CONTROLLED TRIALS

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DISCLOSURE

• Nothing to declare
INTRODUCTION

Long-term follow-up = A follow-up of at least 10 years

Limited number of long-term follow-ups of patients after ACL reconstruction:
  • Several different types of publications
  • Only a handful RCTs

Understanding early predictors may help clinicians to understand which patients develop osteoarthritis (OA) and which patients who perceive and acceptable knee function.
PURPOSE

The purpose of this study was to determine preoperative predictors of acceptable knee function and the development of OA in long-term follow-up after ACL reconstruction.
METHODS

• A long-term follow-up of two RCTs

• 147/193 patients = 76%

• Similar rehabilitation program with immediate full weight-bearing and with full ROM utilizing the weight of the leg.

• ACL reconstructions were performed with triple ST autografts, quadruple ST, quadruple ST/GT autografts, or PT autografts.

• The Human Ethics Committees of the Medical Faculty at Gothenburg University and Stockholm University approved the study.
METHODS

- 23 patients had sustained a new ACL injury = excluded
- Minor differences in baseline characteristics but excluded patients were slightly younger
PASS = Patient Acceptable Symptom State

“The taking into account all the activity you have during your daily life, your level of pain, and also your activity limitations and participation restrictions, do you consider the current state of your knee satisfactory?”

YES =>
Mean KOOS & IKDC response

<table>
<thead>
<tr>
<th></th>
<th>Threshold</th>
<th>Sensitivity</th>
<th>Specificity</th>
</tr>
</thead>
<tbody>
<tr>
<td>IKDC-SKF KOOS subscale</td>
<td>75.9</td>
<td>0.83</td>
<td>0.96</td>
</tr>
<tr>
<td>Pain</td>
<td>88.9</td>
<td>0.82</td>
<td>0.81</td>
</tr>
<tr>
<td>Symptoms</td>
<td>57.1</td>
<td>0.78</td>
<td>0.67</td>
</tr>
<tr>
<td>Activities of daily living</td>
<td>100.0</td>
<td>0.70</td>
<td>0.89</td>
</tr>
<tr>
<td>Sport and recreation</td>
<td>75.0</td>
<td>0.87</td>
<td>0.88</td>
</tr>
<tr>
<td>Quality of life</td>
<td>62.5</td>
<td>0.82</td>
<td>0.85</td>
</tr>
</tbody>
</table>


Hamrin Senorski E, Svantesson E, Beischer S, Grassi A, Krupic F, Thomeé R, Samuelsson K. Factors affecting the achievement of a patient acceptable symptom state one year after ACL reconstruction - A cohort study on 343 patients from two registries. Accepted OJSM
METHODS - OUTCOME

The development of OA was defined as a Kellgren-Lawrence ≥ 2

<table>
<thead>
<tr>
<th>Grade</th>
<th>Radiologic Findings</th>
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<tbody>
<tr>
<td>I</td>
<td>Doubtful joint space narrowing (JSN) and possible osteophytic lipping</td>
</tr>
<tr>
<td>II</td>
<td>Definite osteophytes and possible JSN on anteroposterior weight-bearing radiograph</td>
</tr>
<tr>
<td>III</td>
<td>Multiple osteophytes, definite JSN, sclerosis, possible bony deformity</td>
</tr>
<tr>
<td>IV</td>
<td>Large osteophytes, marked JSN, severe sclerosis and definite bony deformity</td>
</tr>
</tbody>
</table>
RESULTS – LONG-TERM PASS (IKDC)

On average 16.4 years after ACL reconstruction:

- The presence of concomitant injury at the time reconstruction
- And, increased preoperative anteroposterior knee joint laxity
  favoured reporting an acceptable knee function
- No differences between graft choices

AUC = 0.67
(0.58-0.77)
RESULTS – LONG-TERM OA

On average 16.4 years after ACL reconstruction:

- Waiting more than one year between injury and reconstruction
- And older age

was associated with the development of OA

- No difference between graft choices

AUC = 0.71
(0.61-0.80)
CONCLUSION - TAKE HOME MESSAGE

• Patients who were older at the time of ACL reconstruction and had waited >1 year between the injury and reconstruction ran an increased risk of having OA in the long term after reconstruction.

• One in 2 patients reported acceptable long-term knee function, but no risk factor for poorer subjective knee function was identified.

• Patients who had a minor concomitant injury and increased preoperative anteroposterior knee laxity had increased odds of reporting an acceptable long-term knee function.
REFERENCES


