Good long term outcomes after ACL reconstruction with Three different surgical Techniques: a Prospective Randomized Clinical and Radiographic Evaluation at a minimum of 20 Years Follow-Up

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ACL-STUDY-GROUP 2024

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DISCLOSURES

- **S.Z.:**

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ACL STUDY GROUP 2024

CURRENT DEBATED ISSUES AROUND ACL-R

LET

IDEAL GRAFT

?

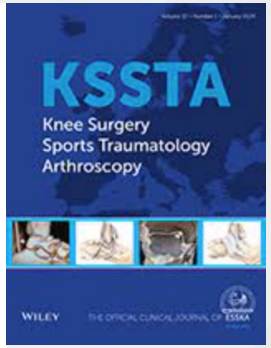
GRAFT FIXATION

TUNNEL PLACEMENT

BACKGROUND

Prospective and randomized evaluation of ACL reconstruction with three techniques: a clinical and radiographic evaluation at 5 years follow-up

Stefano Zaffagnini · Maurilio Marcacci · Mirco Lo Presti · Giovanni Giordano · Francesco Iacono · Maria Pia Neri



- 75 PATIENTS (25 each group) RANDOMIZED CONTROLLED
- 3 DIFFERENT ACL-R TECHNIQUES
- SURGERIES PERFORMED IN 1998-1999
- FIRST EVALUATION PERFORMED AT 5 YEARS OF FOLLOW-UP

Zaffagnini et al., KSSTA 2006

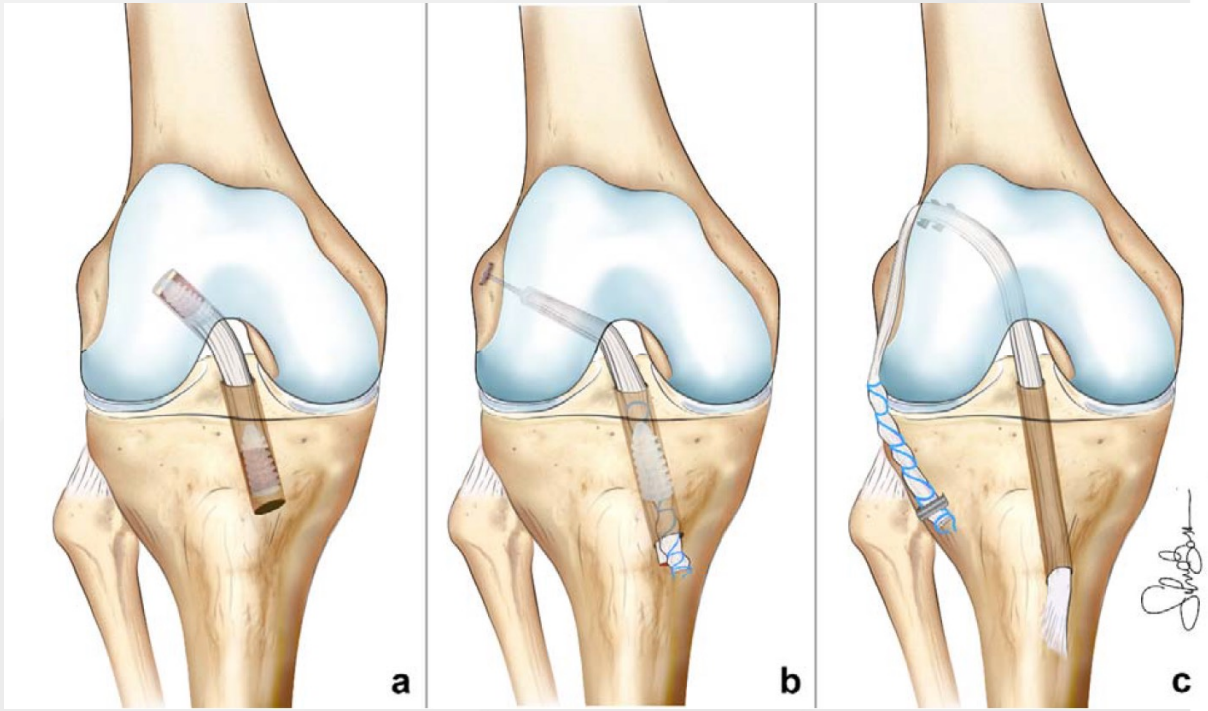
PURPOSE OF THE STUDY

TO COMPARE **FAILURE RATES, CLINICAL OUTCOMES** AND

OA INCIDENCE OF **3 DIFFERENT ACL-R TECHNIQUES**:

AT **20 YEARS MINIMUM FOLLOW-UP**

a. SINGLE BUNDLE PATELLAR TENDON (BTB)
b. SINGLE BUNDLE WITH QUADRUPLED HAMSTRINGS (HS-SB)
c. «OVER THE TOP» + LET WITH HAMSTRINGS (HS-LET)



MATERIALS AND METHODS

PATIENTS EVALUATION:

- **CLINICAL SCORES:**

Lysholm, VAS, IKDC, KOOS, WOMAC

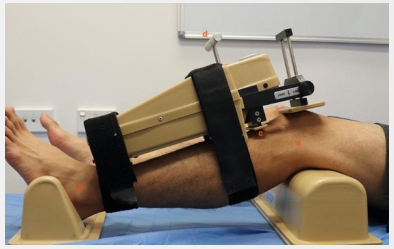
- **RADIOGRAPHIC EVALUATION (OA INCIDENCE)**

KELL-GREEN LAWRENCE and **IWANO SCALE**

- **OBJECTIVE LAXITY EVALUATION:**

A-P laxity **(AP, KT-1000)**

Pivot Shift quantification **(TRIAXIAL-ACCELEROMETER)**



- **SURGICAL FAILURE**

ACL REVISION / EVIDENCE OF GRAFT RUPTURE

- **CLINICAL FAILURE:**

SURGICAL FAILURE

or

KT-1000 SIDE-TO-SIDE > 5MM
PS SIDE-TO-SIDE > 1.5 MM/S^2

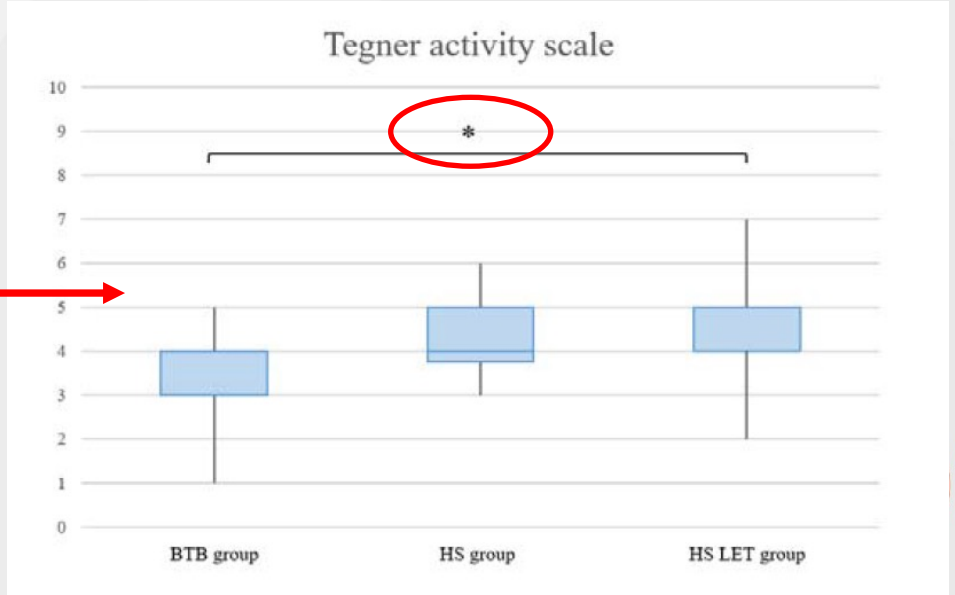
RESULTS

- 61 PATIENTS EVALUATED AT 23.0 ± 1.1 YEARS (FU rate 81%)
- NO DIFFERENCES IN DEMOGRAPHICS BETWEEN THE 3 GROUPS

CLINICAL SCORES:

➢ NO DIFFERENCES IN VAS, KOOS, Lysholm, WOMAC (p>0.05)

- HS-LET SIGNIFICANTLY HIGHER TEGNER THAN BTB GROUP (p=0.02)



RESULTS

FAILURE ANALYSIS:

SURGICAL FAILURE
(revision surgery)

- 16% for the BTB group
- 10% for the HS group
- 5% for the HS-LET group

CLINICAL FAILURE
(KT-1000 side-to-side > 5mm or PS side-to-side > 1.5 mm/s2)

- 29% for the BTB group
- 23% for the HS group
- 19% for the HS-LET group

NO SIGNIFICANT DIFFERENCES BETWEEN THE 3 GROUPS! (p>0.05)

RESULTS

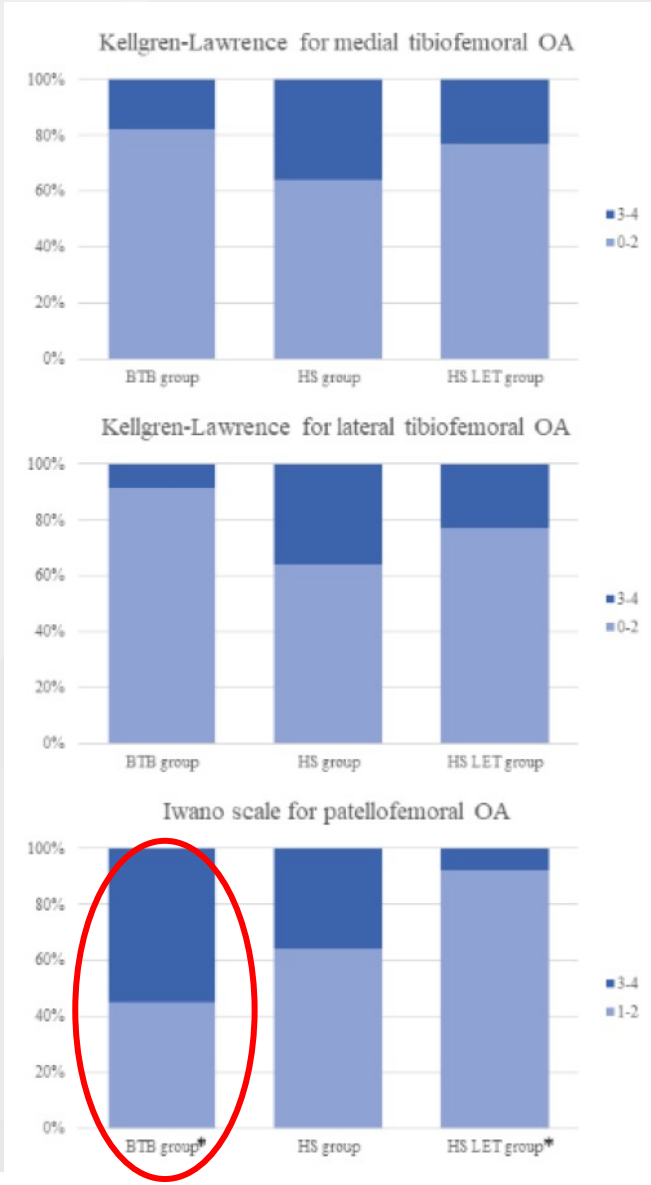
RADIOGRAPHIC EVALUATION:

- NO DIFFERENCES IN MEDIAL-LATERAL OA

  (19% BTB vs 35% HS vs 23% HS-LET)

- BTB → HIGHEST PREVALENCE OF PF OA (p=0.03)

  (55% BTB vs 36% HS vs 8% HS-LET)

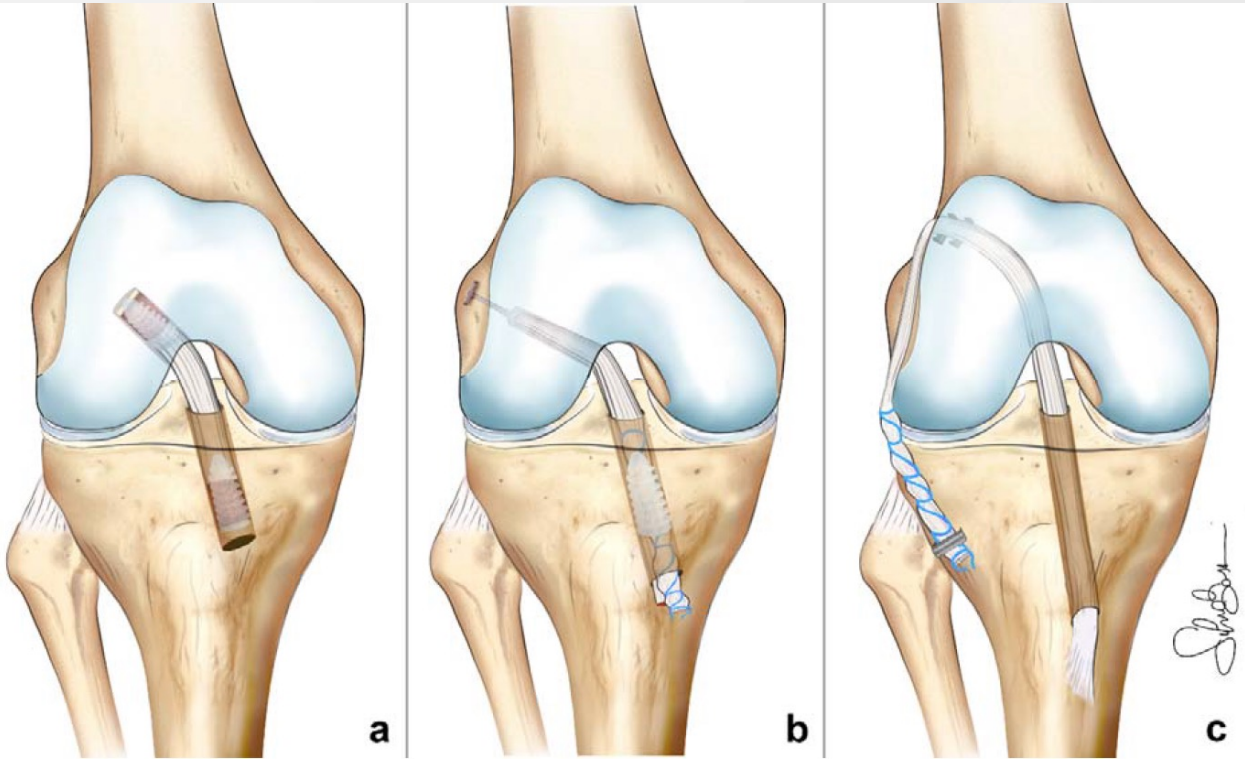


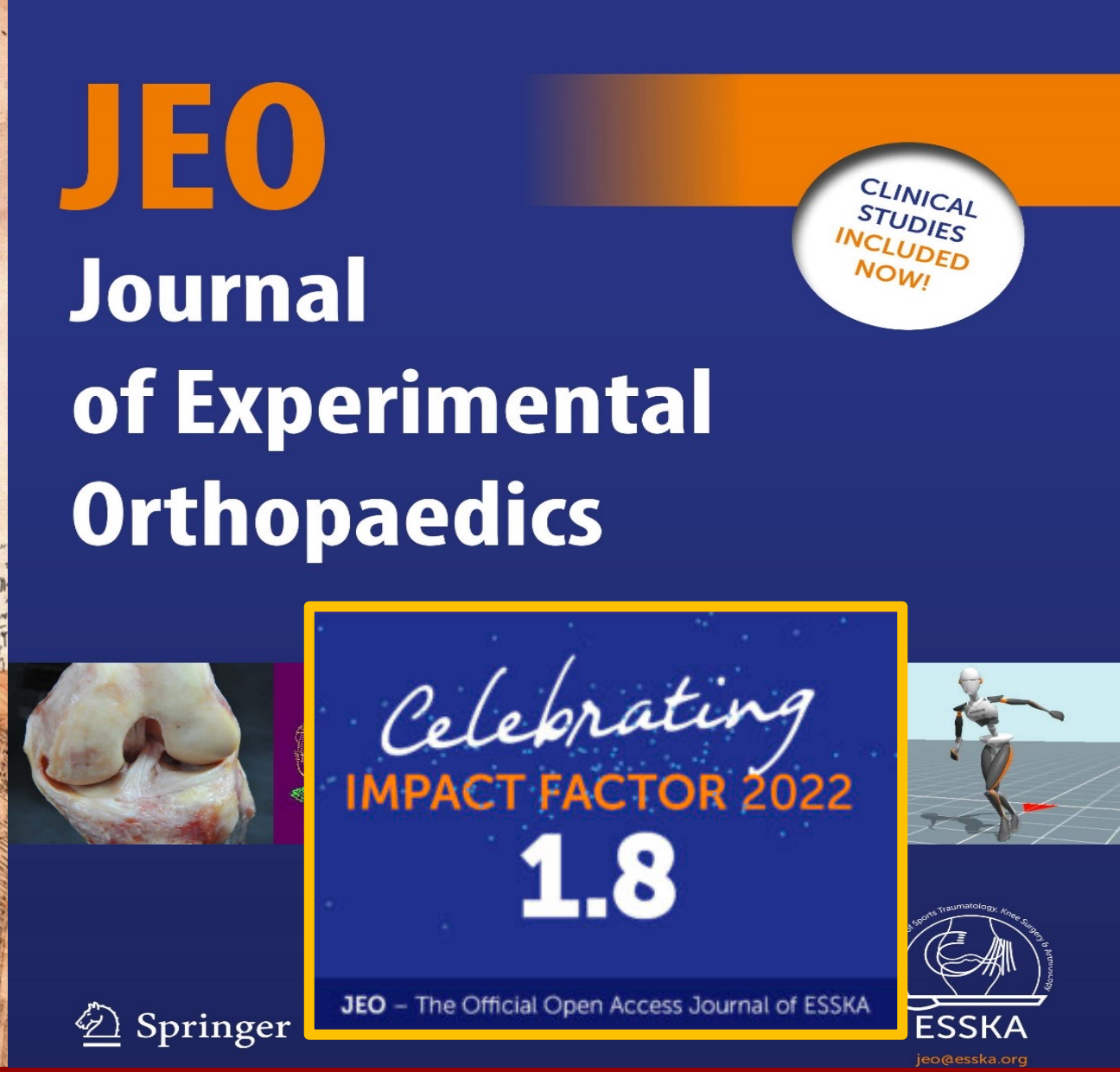
AT 23 YEARS OF FOLLOW-UP:

- LET → NO INCREASE RISK OF LATERAL OA
- BTB → ASSOCIATED WITH HIGHER PF OA

CONCLUSIONS

- THE 3 TECHNIQUES GOOD CLINICAL AND RADIOGRAPHIC OUTCOMES AT 23 Y FU
- OVERALL REVISION RISK FROM 5% to 16%
- HS-LET HIGHER SPORT PARTICIPATION THAN BTB AT FINAL FOLLOW-UP
- LET DOES NOT INCREASE THE RISK OF LATERAL OA
- BTB HAD HIGHEST PREVALENCE OF PATELLOFEMORAL OA





Thank you

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