

Hamstring Allograft versus Autograft in primary Anterior Cruciate Ligament Reconstruction.

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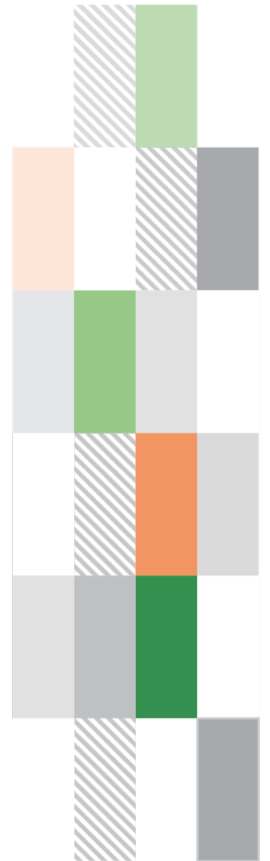
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Conflict of Interest Statement

- ▶ The authors have no conflict of interests to declare.

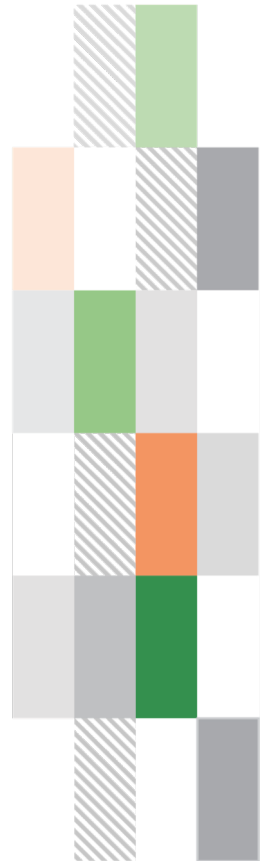


Primary ACL rupture

- ▶ Surgical reconstruction often required due to instability
- ▶ Graft choice remains controversial
- ▶ Allografts gaining upcoming popularity

Aim of this study:

Evaluation of clinical outcomes and HRQOL
after primary ACL reconstruction in patients treated with
Allografts vs Hamstring-Autografts



Autograft vs Allograft

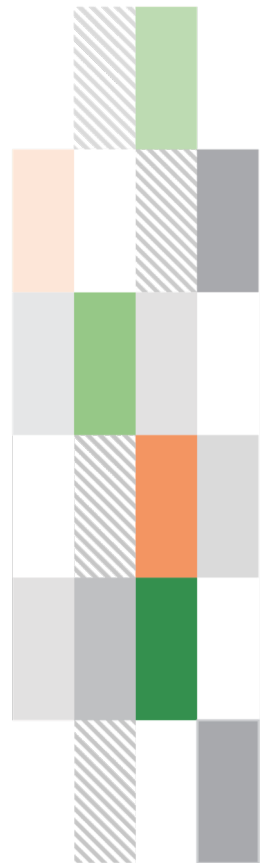


Allograft	Autograft
• Donor-side morbidity • Operation time • Graft reliability • Availability	• Gold standard • Autologous tissue • Evidence • Healing
• Costs • Healing • Graft rejection • Infection	• Donor-side morbidity • Muscular limitation • Pain • Availability



Material & Methods

- ▶ Prospective randomized trial
- ▶ 30 patients were included
- ▶ Age >27 year
- ▶ 15 Allografts vs 15 Hamstring-Autografts
- ▶ 13 months follow-up period
- ▶ MRI follow-up
- ▶ Authorized by ethics committee



Material & Methods

	Before Surgery	6 weeks FU	12 weeks FU	6 months FU	13 months FU
Clinical Examination	X	X	X	X	X
VAS of Pain	X	X	X	X	X
IKDC	X	X	X	X	X
KOOS	X	X	X	X	X
Lysolm Knee Score	X	X	X	X	X
TAS	X	X	X	X	X
SF-36	X	X	X	X	X
Radiography	X	X	X	X	X
MRI	X			X	X



Surgical Technique - Allografts



Source: Medical University of Graz



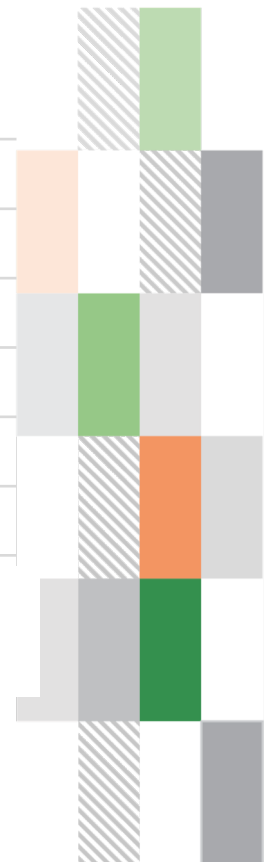
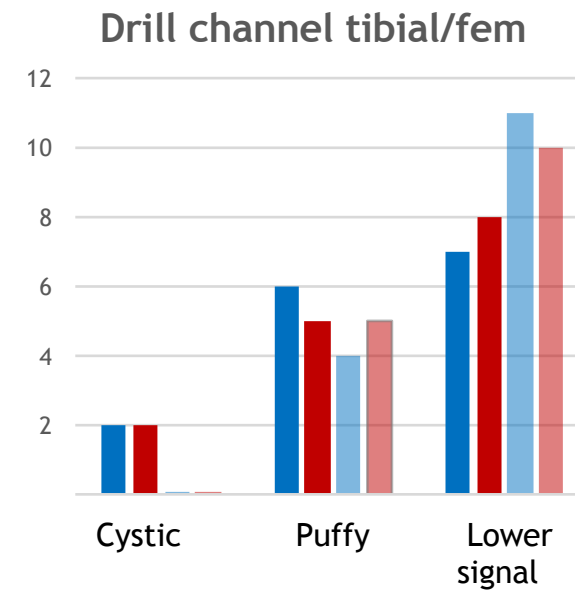
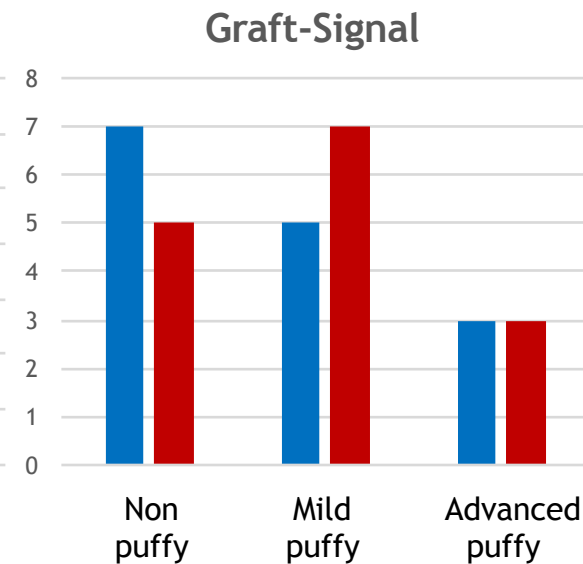
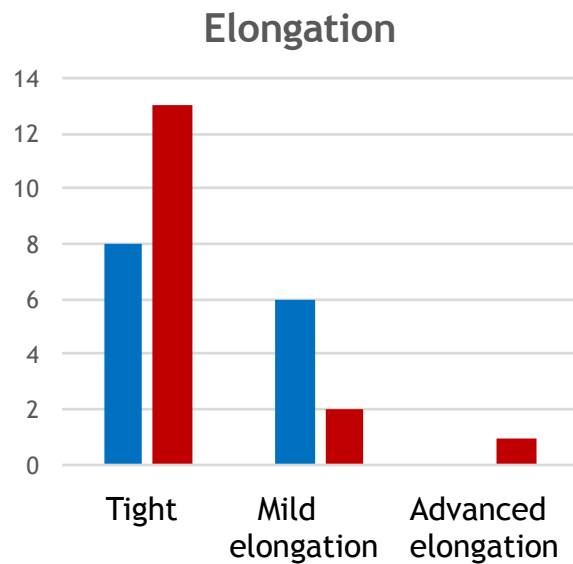
Results - Scores 13 months Postoperatively

	AUTOGRAFT	ALLOGRAFT	
IKDC	Ø 87 (SD ± 5)	Ø 84 (SD ± 7)	p=0.98
KOOS	Ø 80 (SD ± 6)	Ø 77 (SD ± 12)	p=0.32
LYSOLM	Ø 88 (SD ± 13)	Ø 90 (SD ± 12)	p=0.69
TAS	Ø 5.9 (SD ± 1.2)	Ø 5.4 (SD ± 1.3)	p=0.15
SF-36 MSC	Ø 55 (SD ± 6)	Ø 54 (SD ± 12)	p=0.67
SF-36 PCS	Ø 50 (SD ± 6)	Ø 47 (SD ± 4)	p=0.12

► No significant differences!



Results - MRT 13 months Postoperatively



Discussion - Allografts vs Autografts

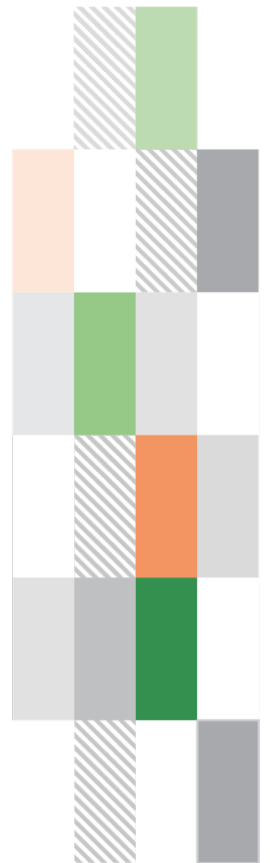
- I. Equal and satisfying results 13 months postop
- II. No significant differences
- III. No revisions after 13 months

Limitations:

- ▶ Inhomogeneous study collective
- ▶ Short follow-up period
- ▶ Low Number of participants
- ▶ Low-dose gamma-irradiation of Allografts

Conclusion:

Allografts in primary ACL reconstruction could be considered as an alternative to Autografts in selected patients!



Literature - Allografts vs Autograft

> Sports Health. 2011 Jan;3(1):73-81. doi: 10.1177/1941738110386185.

Allograft Versus Autograft Anterior Cruciate Ligament Reconstruction: Predictors of Failure From a MOON Prospective Longitudinal Cohort

Christopher C Kaeding¹, Brian Aros, Angela Pedroza, Eric Pifel, Annunziato Amendola, Jack T Andrich, Warren R Dunn, Robert G Marx, Eric C McCarty, Richard D Parker, Rick W Wright, Kurt P Spindler

...increased risk of ACL- Allograft rupture/failure...

Comparative Study > Arthroscopy. 2008 Apr;24(4):448-58. doi: 10.1016/j.arthro.2007.10.011.

Fresh-frozen free-tendon allografts versus autografts in anterior cruciate ligament reconstruction: delayed remodeling and inferior mechanical function during long-term healing in

...remodeling is delayed and long-term stability might be affected for Allografts...

> Knee Surg Sports Traumatol Arthrosc. 2019 Jun;27(6):1882-1890. doi: 10.1007/s00167-019-05425-2. Epub 2019 Mar 19.

Allograft for knee ligament surgery: an American perspective

Kevin Wilson², Alexandra Horvath³, Kevin Byrne², Joseph De Groot²,

...Overall, Allograft offers a safe, effective alternative to autograft use...

Meta-Analysis > Medicine (Baltimore). 2016 Sep;95(38):e4936. doi: 10.1097/MD.0000000000004936.

Autograft versus allograft in anterior cruciate ligament reconstruction: A meta-analysis with trial sequential analysis

Shun Li¹, ...
...Autograft is superior to irradiated Allograft...

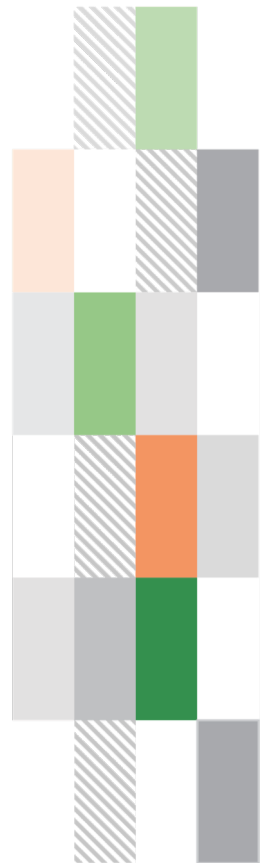
...no significant differences between Autograft and nonirradiated Allograft...

Discussion - Conclusion

- ▶ Increasing use of Allografts
- ▶ Better evidence for ALC revision surgery
- ▶ Relatively high number of reviews and meta-analysis on ACL & allograft/autograft
- ▶ Low number of RCT
- ▶ Heterogeneity in trials and reviews
- ▶ USA: pioneering role



More high quality studies are needed!



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