Platelet-rich plasma (PRP) to treat chronic upper patellar tendinopathies


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Introduction

- Upper patellar tendinopathies remain often chronic and resistant to conservative treatment.
- New treatments are being developed.
- Platelets contain lots of growth factors.
PRP

- In vitro and animal experiments have demonstrated that PRP can stimulate the tendon healing process.
- Clinical series are subject to controversy.
Methods

• 20 patients

• Assessments:
  • VAS
  • algometer
  • algofunctional scores (IKDC and VISA-P)
  • functional assessments (isokinetic and optojump)
  • imagery (US and MRI)

• Evaluations before infiltration, and 6 weeks and 3 months post-infiltration
Methods

• PRP obtained by apheresis system (COM.TEC, Fresenius).

• Site located by US.

• 6mL of PRP were injected without anaesthetic.

• 1 week after infiltration ➔ 6-week standardised sub-maximal eccentric reeducation.

• NSAIDs were avoided.
Results

VAS

\[ \text{Time (weeks)} \]

\[ \begin{array}{cccc}
0 & 2 & 4 & 6 \\
6 & 2 & 2 & 2 \\
4 & 4 & 4 & 4 \\
2 & 2 & 2 & 2 \\
\end{array} \]

\( p < 0.001 \)
Results
Algometer

![Graph showing time in weeks on the x-axis and algometer reading in kPa on the y-axis. The data points are connected by a line with error bars, indicating a significant increase over time. The p-value is less than 0.001.]
Results

IKDC - VISA-P

p=0.03
Results
Isokinetic and optojump
US and MRI

• Pain felt decreased at each functional evaluation.
• No functional improvement.
• No improvement in the imagery.
Results

• Patients with best improvement ➔ younger (24.7 vs 32.2 y.o.)

• VAS ≤ 1

• significant increase of IKDC score (p=0.003)

• significant improvement of pain during isokinetic evaluation (p<0.05) and optojump (p=0.01)

• 70% return to sport (50% same level).
Discussion

• A local infiltration of PRP + submaximal eccentric reeducation ➔ improvement of symptoms of chronic upper patellar tendinopathies.

• No functional or imagery improvement observed.
Discussion

• No general agreement on the preparation and use of PRP.

• Apheresis system provides:
  • «pure» PRP (without red and white cells)
  • reproducible PRP from one patient to another (duration of platelet collect depended on anthropometric and biologic parameters of each patient)
  • choice of PRP concentration
Conclusion

• PRP can be a treatment for resistant chronic tendinopathies.

• RCT are still needed.
Thank you for your attention!