Platelet-rich plasma injections delay the need for knee arthroplasty for five years - a retrospective study and survival analysis

# <u>Mikel Sánchez</u>,

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### Purpose

The biological action of platelet-rich plasma (PRP) could slow down the osteoarthritis progression, resulting in a delay of joint replacement. This work aims to evaluate the ability of PRP to postpone and even avoid knee replacement in patients with knee osteoarthritis (KOA) analyzing, on the one hand, the time of delay and on the other hand the percentage of patients without undergoing total knee arthroplasty (TKA).

## Methods

A retrospective analysis and a survival analysis were conducted. KOA patients who underwent knee replacement between 2014 and 2019 and previously received PRP infiltrations were included in the retrospective analysis. Regarding survival analysis, KOA patients who received PRP treatment during 2014 and with follow-up until 2019 were included. The dates of PRP treatment and TKA, KOA severity, age of the patients, number of PRP cycles, and administration route were analyzed.

#### Results

This work included 1084 patients of which 667 met the inclusion criteria. 74.1% of the patients in the retrospective study achieved a delay in the TKA of more than 1.5 years, with a median delay of 5.3 years. The survival analysis showed that 85.7% of the patients did not undergo TKA during the five year follow-up. The severity degree, age, PRP cycles, and administration route had a statistically significant influence on the efficacy of PRP in delaying surgery.

#### Conclusion

These data suggest that the application of PRP in KOA patients is a treatment that could delay TKA, although further studies are needed to understand and improve this therapy.