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Evaluation of current practices in the use of Platelet Rich Plasma in Musculoskeletal Disorders

Mahi L^{1,*}, K. Belattar², M. Ouafi³, R. Vaineau¹, S. Lambert¹, R. Lammari¹

¹ Axelys Santé - Malakoff, ² Centre Melunais d'Imagerie Médicale – Melun, France, ³ Centre Hospitalier Sud Francilien – Corbeil Essonne, France
*Correspondence: lamine.mahi@axelys-sante.com

INTRODUCTION & OBJECTIVES OF THE SURVEY

PRP

Platelet Rich Plasma (PRP) is an innovative therapy with tissue regeneration potential that plays an important role in various medical indications.

Classification of PRP according to:

- ☐ Activation status
- ☐ Leukocyte concentration
 - Leukocyte-rich (LR-PRP)
 - Leukocyte-poor (LP-PRP)
 - Leukocyte-free (pure-PRP)
- ☐ Erythrocyte concentration
- ☐ Total volume

Dohan Ehrenfest et al. 2014
DeLong et al. 2012
Mautner et al. 2015

What are the indications?

- Joint disorders, mainly knee osteoarthritis (OA)
- Tendinopathies
- Ligament damage (sprains)
- Other: urology, dentistry, etc.

Use of PRP

About 50 medical devices are available on the global market for the production of autologous PRP

J. Magalon et al. 2021

Survey objectives:

- 1) Assess the role of PRP in musculoskeletal disorders in France.
- 2) Understand the practical details of using PRP in routine clinical practice in France.

METHODS

From a French professional database, **200 physicians** from different specialties were **selected**, because of their interest in PRP, to participate to this qualitative and anonymous **cross-sectional survey**. The questionnaire, available online via a **QR Code link**, included several questions on the medical use of PRP. Among them, **46 physicians (23%)** accepted to respond to this survey. The questionnaire remained available from 13/01/2024 to 20/03/2024 (i.e. 2 months).

Table 1 : Medical specialties of participating physicians

Specialities	Physicians N (%)
Sports medicine	12 (26,1%)
Rheumatology	8 (17,4%)
General medicine	7 (15,2%)
Radiology	7 (15,2%)
Physical and rehabilitation medicine	4 (8,7%)
Orthopedic surgery	3 (6,5%)
Other	5 (10,9%)

The limitations of this type of study lie in the selective and voluntary nature of the physicians involved.

RESULTS

98% of physicians are familiar with PRP

96% consider PRP as a therapeutic option

94% use PRP injections

74% prescribe PRP injections

82% prefer leukocyte-poor PRP

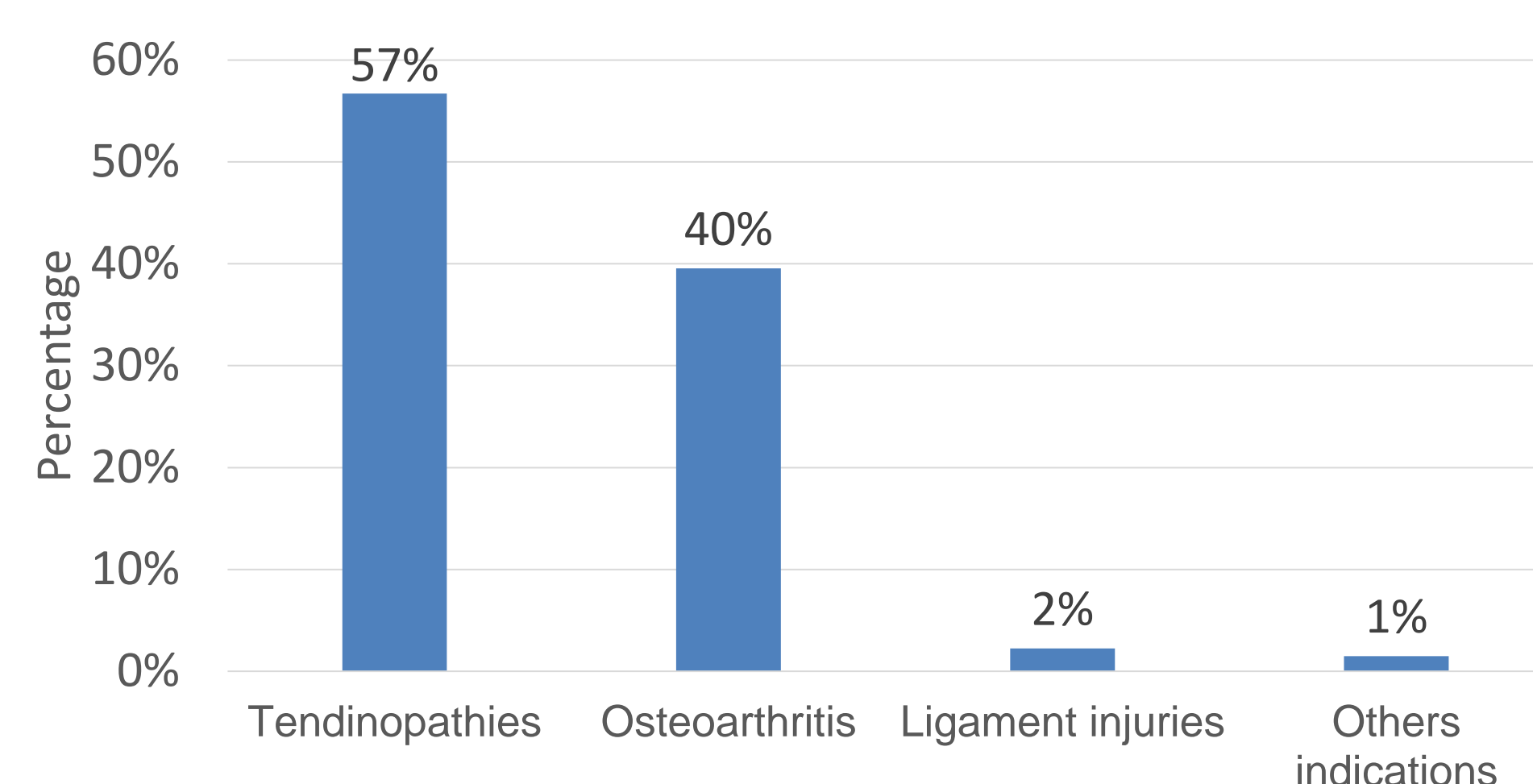


Figure 1 : Indications for which PRP injections have been prescribed

PRP and it's positioning in the therapeutic strategies of musculoskeletal indications

- As a first-line treatment, PRP is prescribed by **47% of physicians** for patients who have **never** received corticosteroids.
- As a second-line treatment, **66% of physicians** prescribed PRP after corticosteroid infiltration.
- On the other hand, PRP is **rarely prescribed (9%)** after viscosupplementation (hyaluronic acid).

Practical details of how PRP is used

- A **blood count** was requested by **only 34%** of responders **prior to injection**.
- **52%** of prescribers claim to be **assisted in preparing the PRP by a nurse**.
- Approximately **19% of participants** reported having **less than one year of experience**, **37% had between 1 and 3 years**, and **44% had more than 3 years**.

Table 2: PRP volumes and indications

	2-4 ml	5-9 ml	10-15 ml	Other
Knee osteoarthritis (OA)	13%	65%	16%	6%
Tendinopathy	65%	19%	3%	13%

Figure 2: Use of ultrasound

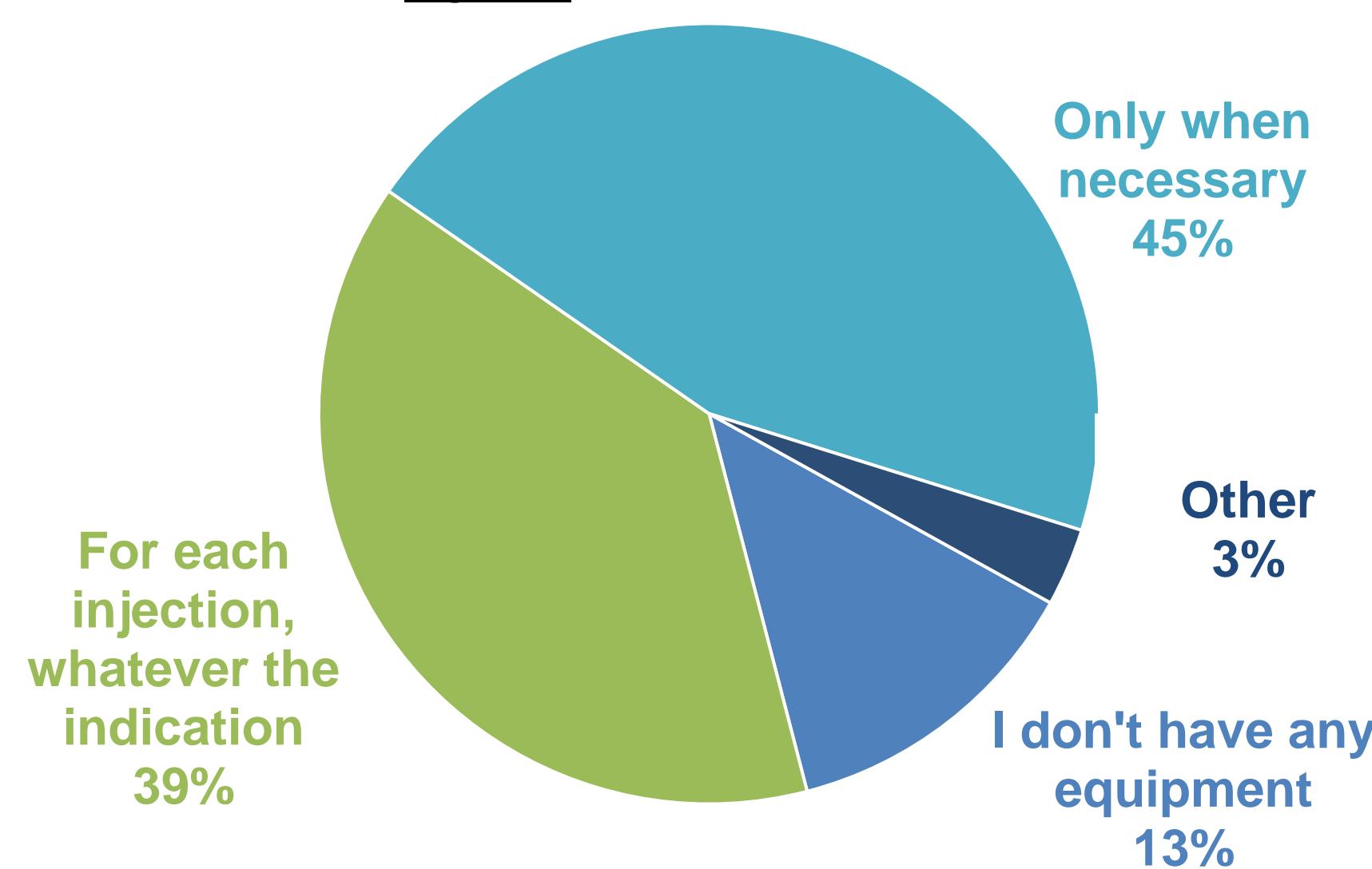


Figure 3 : Evaluation of treatment efficacy

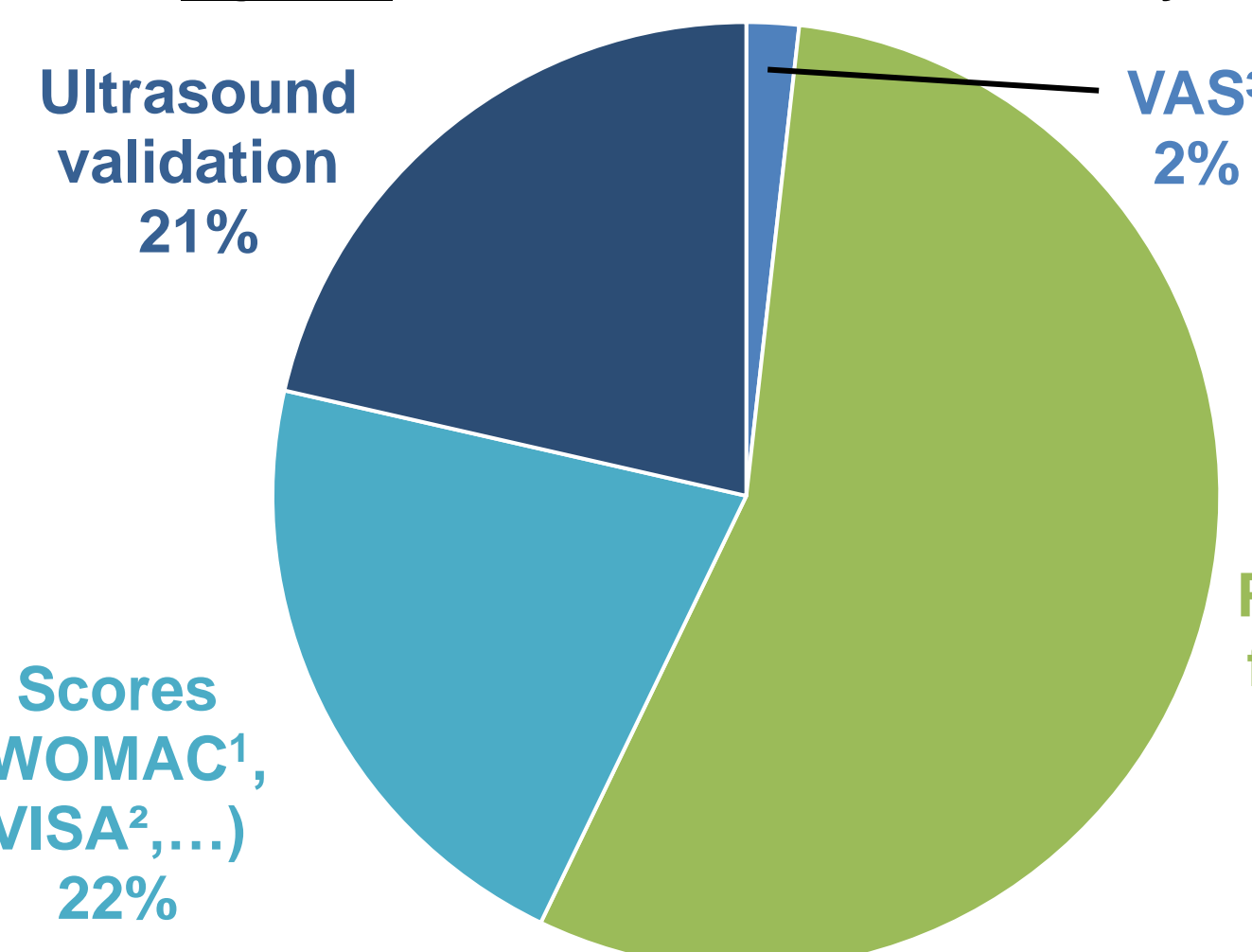
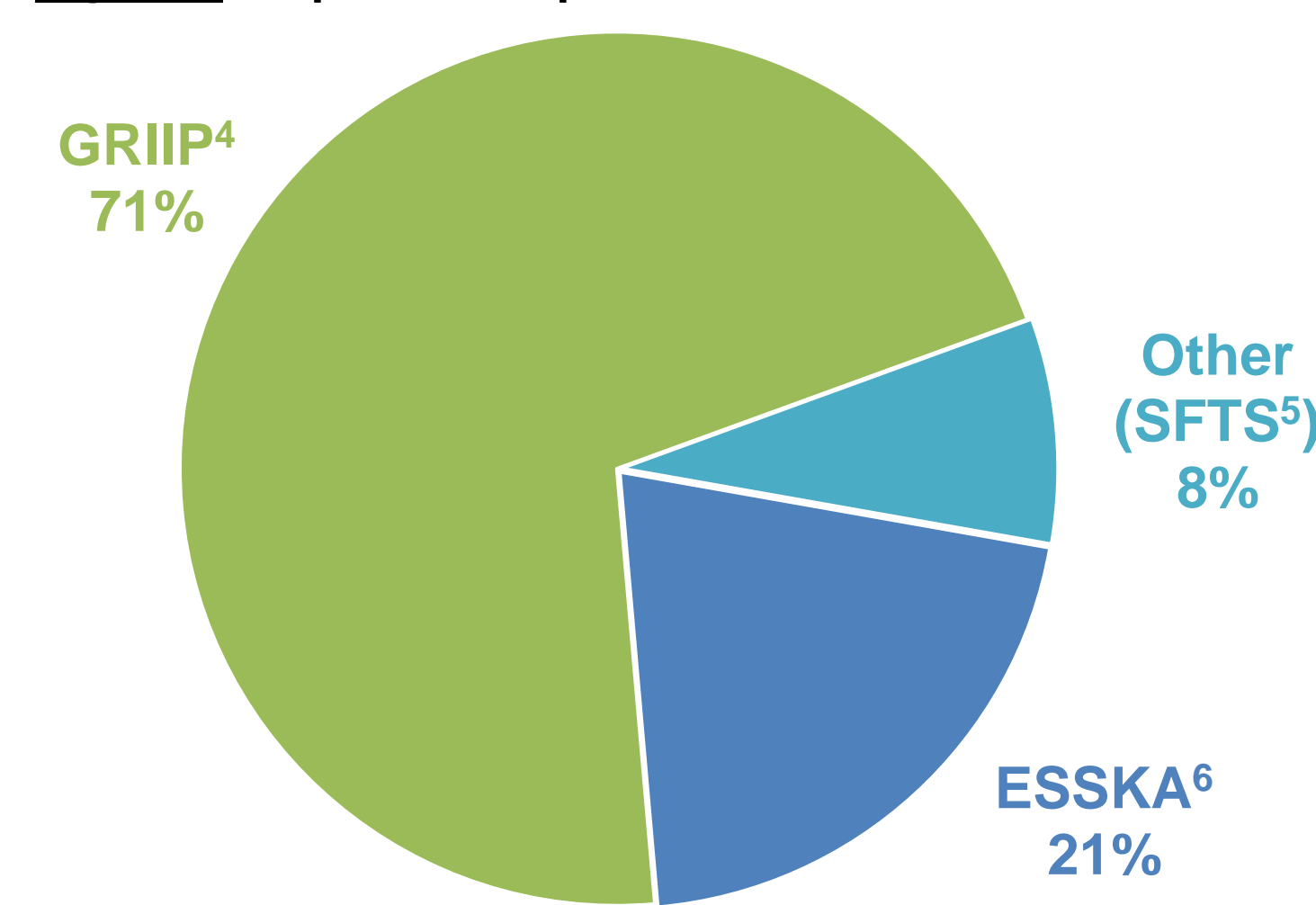


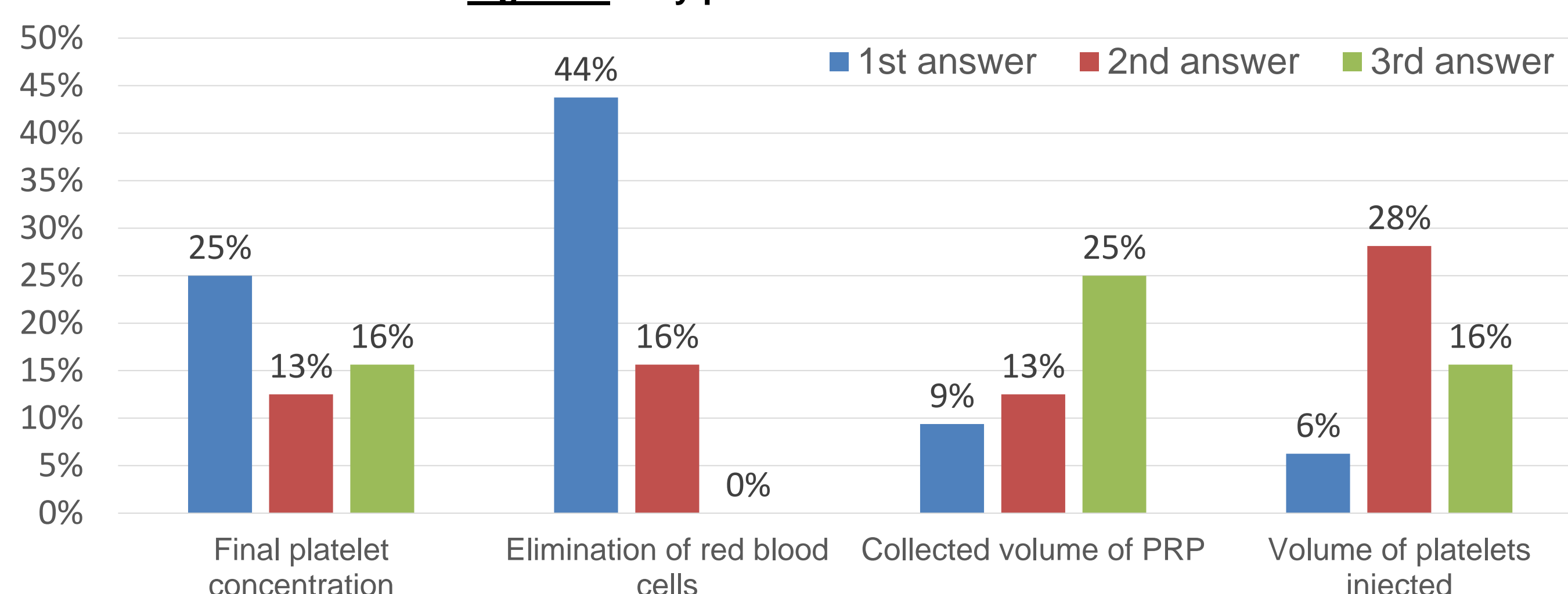
Figure 4: Experts Groups and Scientific Societies



- A **follow-up** is performed **a month after PRP injections (47%)**, while the **majority (53%)** see patients later **after several months**.

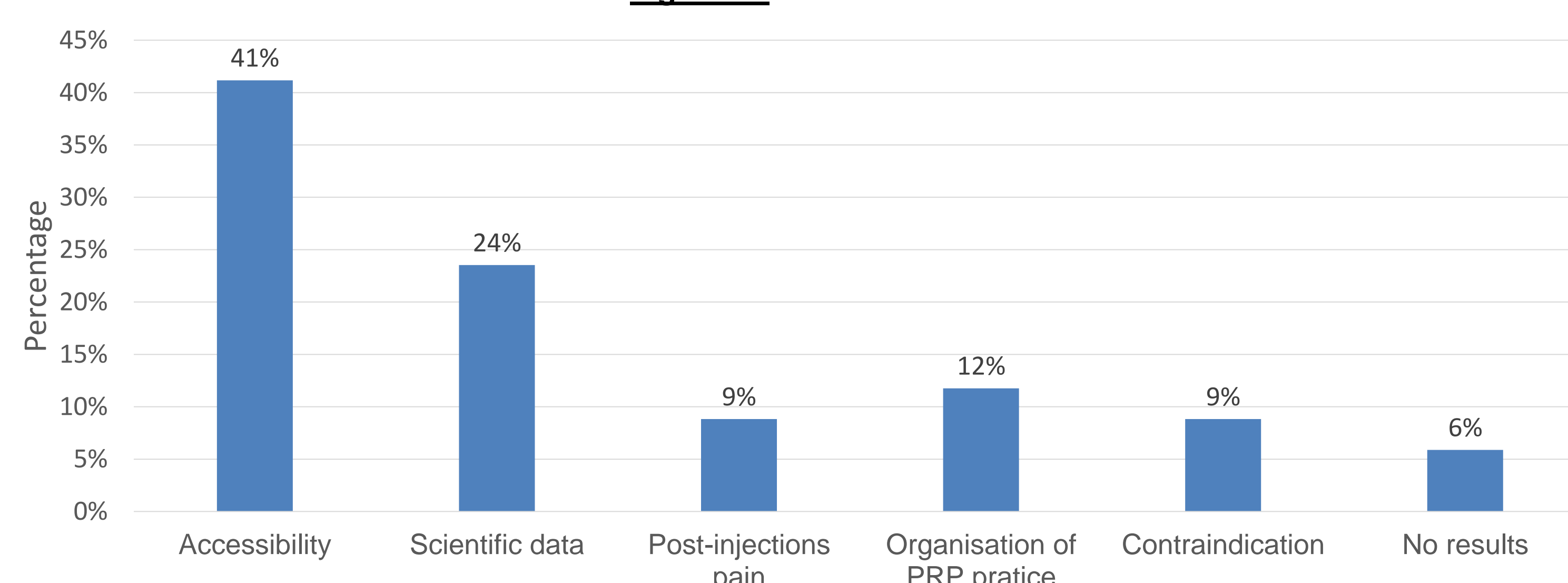
Preferences & requirements of physicians for PRP use

Figure 5 : Key preferred features of the PRP



- The elimination of red blood cells as an essential feature of PRP preparation devices was cited as the first choice by 44%, followed by the volume of platelets injected and, finally, the volume of PRP collected (25%).

Figure 6 : Main limitations



- Accessibility to PRP was cited by 41% of participants as a limitation, followed by a lack of scientific data according to 24% of physicians.

DISCUSSION

- Despite its undeniable recognition by health professionals, the **evaluation** of the PRP is often based on **subjective criteria** such as the **patient's feelings**.
- **More than a third of physicians** consider that the **lack of validated scientific data** and the fact that the **cost is not covered by the community** are **obstacles** to wider use.

CONCLUSION

- ✓ The results suggest **strong adhesion for the use of PRP in osteoarticular** disorders, based on a clear scientific rationale. However, real-life controlled and/or **observational studies are needed** to establish this practice.
- ✓ Wider surveys and studies at larger scale are needed to confirm the modalities of PRP use.

¹ WOMAC: Knee OA functional assessment index (Western Ontario and Mc Master University osteoarthritis)

² VISA : Pain and functional limitation assessment scale for patients suffering from tendinopathy (Victorian Institute of Sports Assessment)

³ VAS : Visual analog scale (Pain assessment)

⁴ GRIPP : International Research Group on Platelet Injections

⁵ ESSKA : European Society for Sports Traumatology, Knee Surgery and Arthroscopy

⁶ SFTS : French Society of Sports Traumatology