Use of injectable orthobiologics for the treatment of knee osteoarthritis

Part 1: blood-derived products (alias PRP)

Chairpersons: Laura de Girolamo, Lior Laver
This brochure is a summary of ESSKA Orthobiologics Consensus

Full text is available on www.esska.org/page/projects

PRESIDENTIAL FOREWORD

There is great variation across Europe when it comes to medical praxis. Agreeing a common approach to pathologies or procedures has always been a challenge. But some such agreement is important, if we are to ensure standards.

For years now, one of ESSKA’s objectives has been to work on professional standards. Thus, ESSKA has developed a strict and painstaking methodology which employs our considerable European expertise. We call it ESSKA’s European Consensus.

Our first European Consensus was presented in 2016-2018 on Meniscus (Degenerative lesions and Traumatic tears). More information is available on www.esska.org.

This year, at ESSKA 2022 Paris Congress, we are delighted to launch the ESSKA ORBIT Consensus.

We thank Laura de Girolamo and Lior Laver, the Project leaders, our Consensus Projects Advisor, Prof. Philippe Beaufils, as well as the members of the Steering, Rating, and Peer Review Groups for their efforts and dedication.

A special acknowledgement also for our staff, and particularly Mrs Anna Hansen Rak, without whom this would have been not possible.

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GRADING DESCRIPTION

• Grade A: high scientific level
• Grade B: scientific presumption
• Grade C: low scientific level
• Grade D: expert opinion
The field of Orthobiologics has emerged in recent years as a result of the growing interest in biologic approaches for tissue healing for a variety of pathologies affecting bone, cartilage, tendons/ligaments and muscles, both as conservative injection treatment and in combination with surgical procedures. The results of these treatments are inconclusive because of the lack of unanimous opinion by professionals in terms of patients’ indications, administration protocols and even more in the choice of the available options/devices. Moreover, therapy developers and providers must address hurdles from regulatory issues, through reimbursement considerations and to commercial challenges before successful orthobiologic therapies are available to patients. All of this risks to devalue the potential and the use of these treatments, with a potential loss of valid care opportunities.

As Europe’s largest association of musculoskeletal specialists, ESSKA felt it had a responsibility to advance the quality of care in the orthobiologics field in a fully transparent and scientific manner.

The ESSKA ORthoBiologics InitiaTive (ORBIT) aimed to generate and assemble a pan-European/International collaboration to create a common language and a uniform voice in the field of orthobiologics.

ORBIT has highlighted and prioritized the importance of adopting an evidence-based and systematic approach to evaluating the effectiveness of existing and emerging orthobiologic treatments. While Orthobiologics can be used to treat a variety of conditions, osteoarthritis, and in particular knee osteoarthritis is the most commonly addressed pathology.

Therefore, the aim of this first ESSKA Consensus on the use of injectable orthobiologics is to integrate and promote the clearest message currently available from scientific work and expert opinion regarding the use of blood derived products for the treatment of knee OA. For the sake of simplicity PRP (Platelet Rich Plasma) has been used as the most common term to refer to this wide product category.

A consensus focusing on cell-based therapy for the treatment of knee OA will be available soon.

**Chairpersons Foreword**

Laura de Girolamo  
Chairperson

Lior Laver  
Chairperson

**PRP - Rationale/Indications**

Does current clinical evidence support the use of PRP for knee OA?

Clinical evidence confirms the efficacy of PRP in the treatment of knee osteoarthritis (OA). Level I and II clinical studies, as well as additional prospective studies, support the safety and clinical benefit of PRP for knee OA, which was shown in comparison to both placebo (saline) and control treatments such as hyaluronic acid or corticosteroids (CS). The efficacy of PRP in the treatment of knee OA has been also supported by meta-analyses and confirms the findings of preclinical research.

The consensus group can therefore conclude that there is enough preclinical and clinical evidence to recommend/support the use of PRP in knee OA (see following questions addressing PRP specifications and indications).

**Grade A**

For which degrees of knee OA is PRP best indicated?

Clinical evidence has shown the effectiveness of PRP in patients for both mild to moderate degrees of knee OA (KL ≤ 3). The consensus group concludes that PRP can be indicated mainly in mild and moderate cases of knee OA. (Grade A)

**Can PRP be used in severe knee OA (KL4)?**

PRP treatment could be considered in selected severe knee OA cases (KL4), for example in patients who decline or are not suitable for surgery due to comorbidities, although lower results could be expected and physicians should provide cautious expectations when discussing or suggesting this biological approach. (Grade C)

Are there advantages of PRP use in comparison to corticosteroids for treating knee OA?

While corticosteroids are strong anti-inflammatory agents and can provide short term relief in knee OA, they have been shown to have detrimental effects on chondrocytes and can lead to accelerated cartilage degeneration, especially with multiple/repeated injections. PRP injections have been shown to have a longer effect in comparison to the shorter term effect of CS injections. They also seem to provide a safer use profile with less potential related complications. The consensus group considers PRP injections to be a safer, non-chondro-toxic and more effective treatment option, with longer term clinical improvements compared to CS injections. (Grade A)

Is PRP a clinically better injectable option than hyaluronic acid for the treatment of knee OA?

Several high level studies as well as multiple meta-analyses exist comparing the effectiveness of PRP compared to HA for knee OA, with the majority favoring PRP in terms of overall clinical improvement and a longer-lasting effect.

Based on current available evidence, the consensus group supports the use of PRP over HA for knee OA due to overall clinical improvement and expected longer-lasting effects, whilst acknowledging that there are different formulations of the products that may introduce some bias in the conclusions of meta-analyses. (Grade B)

Does PRP induce disease-modifying effects in knee OA?

Preclinical studies (animal models) suggest some disease modifying effects, with positive changes on cartilage tissue and on the synovial membrane. Although few clinical studies have suggested disease modifying potential of PRP on degenerative cartilage, current clinical evidence regarding the disease modifying effects of PRP in knee OA in humans is insufficient. (Grade C)
ACKNOWLEDGEMENTS

To all members of the rating group: Isabel Andia, Lars Blønd, Berte Bøe, Tomislav Cengic, Ignacio Dallo, Philippe Heuberer, Kaywan Izadpanah, Ladaslav Kovacic, Koen Lagae, Laura Mangiavini, Jacques Menetrey, Stefan Mogos, Emmanuel Papakostas, Yiannis Pengas, Helder Pereira, Tim Spalding, Tomasz Piontek, Patricia Thoreux, Trifon Totlis, Kerem Tekin Ulku, Peter Verdonk, Yaniv Yonai, Stefano Zaffagnini and the ESSKA office (special thanks to Anna Hansen Rak). We would also like to thank the peer reviewers of the national societies.
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