

NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Interventional procedures consultation document

Platelet-rich plasma injections for knee osteoarthritis

Osteoarthritis can develop in the knee, when cartilage covering the ends of the bones becomes worn. This can cause pain, stiffness, swelling and difficulty walking. In this procedure, red blood cells are removed from a small amount of the person's own blood, leaving a liquid called plasma. This contains tiny cells called platelets, which can stimulate the natural healing process. This plasma is injected into the knee. The aim is to relieve symptoms.

The National Institute for Health and Care Excellence (NICE) is looking at platelet-rich plasma injections for osteoarthritis of the knee. NICE's interventional procedures advisory committee has considered the evidence and the views of specialist advisers, who are consultants with knowledge of the procedure.

The committee has made draft recommendations and we now want to hear your views. The committee particularly welcomes:

- comments on the draft recommendations
- information about factual inaccuracies
- additional relevant evidence, with references if possible.

This is not our final guidance on this procedure. The recommendations may change after this consultation.

After consultation ends:

- The committee will meet again to consider the original evidence and its draft recommendations in the light of the consultation comments.
- The committee will prepare a second draft, which will be the basis for NICE's guidance on using the procedure in the NHS.

For further details, see the [Interventional Procedures Programme process guide](#).

Through our guidance, we are committed to promoting race and disability equality, equality between men and women, and to eliminating all forms of

discrimination. One of the ways we do this is by trying to involve as wide a range of people and interest groups as possible in developing our interventional procedures guidance. In particular, we encourage people and organisations from groups who might not normally comment on our guidance to do so.

To help us promote equality through our guidance, please consider the following question:

Are there any issues that require special attention in light of NICE's duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity, and foster good relations between people with a characteristic protected by the equalities legislation and others?

Please note that we reserve the right to summarise and edit comments received during consultations or not to publish them at all if in the reasonable opinion of NICE, there are a lot of comments, or if publishing the comments would be unlawful or otherwise inappropriate.

Closing date for comments: 20 September 2018

Target date for publication of guidance: December 2018

1 Draft recommendations

- 1.1 Current evidence on platelet-rich plasma injections for knee osteoarthritis raises no major safety concerns. However, the evidence on efficacy is limited in quality. Therefore, this procedure should only be used with [special arrangements](#) for clinical governance, consent, and audit or research.
- 1.2 Clinicians wishing to do platelet-rich plasma injections for knee osteoarthritis should:
- Inform the clinical governance leads in their NHS trusts.
 - Ensure that patients understand the procedure's safety and efficacy, as well as any uncertainties about these. Provide them with clear information to support [shared decision-making](#). In

addition, the use of NICE's [information for the public](#) is recommended.

- Audit and review clinical outcomes of all patients having platelet-rich plasma injections for knee osteoarthritis. NICE has identified relevant audit criteria and is developing an audit tool (which is for use at local discretion), which will be available when the guidance is published.

- 1.3 Further research should be in the form of randomised controlled trials with medium to long-term follow-up, including validated measures of knee function and patient-reported outcomes.

2 The condition, current treatments and procedure

The condition

- 2.1 Osteoarthritis of the knee is the result of progressive deterioration of the articular cartilage and menisci of the joint, usually because of trauma and wear and tear. This leads to exposure of the bone surface. Symptoms include pain, stiffness, swelling and difficulty walking.

Current treatments

- 2.2 Treatment depends on the severity of the symptoms. Conservative treatments include analgesics and corticosteroid injections to relieve pain and inflammation, and physiotherapy and prescribed exercise to improve function and mobility. When symptoms are severe, surgery may be indicated: options include upper tibial osteotomy and unicompartmental or total knee replacement.

The procedure

- 2.3 Platelet-rich plasma is prepared by a clinician or a technician. Blood is taken from the patient and centrifuged to obtain a

concentrated suspension of platelets in plasma. It can be prepared by carrying out 2-spin cycles using a standard bench-top centrifuge, or by using commercially available single-step preparation systems. Different preparation methods may affect the concentrations of platelets. Agents such as calcium chloride may be added to activate the platelets.

- 2.4 The platelet-rich plasma is injected into the joint space in the knee, usually under ultrasound guidance. Platelets contain growth factors that are thought to stimulate chondrocyte proliferation, leading to cartilage repair. The aim is to relieve symptoms, potentially delaying the need for joint replacement surgery.

3 Committee considerations

The evidence

- 3.1 To inform the committee, NICE did a rapid review of the published literature on the efficacy and safety of this procedure. This comprised a comprehensive literature search and detailed review of the evidence from 7 sources, which was discussed by the committee. The evidence included 3 systematic reviews and 4 randomised controlled trials, and is presented in table 2 of the [interventional procedures overview](#). Other relevant literature is in the appendix of the overview.
- 3.2 The specialist advisers and the committee considered the key efficacy outcomes to be: reduction in pain and improvement in knee function using validated scores, and quality of life.
- 3.3 The specialist advisers and the committee considered the key safety outcomes to be: infection, bleeding, pain and inflammation.
- 3.4 Patient commentary was sought but none was received.

- 3.5 This guidance is a review of NICE's interventional procedures guidance on [platelet-rich plasma injections for knee osteoarthritis](#).

Committee comments

- 3.6 There are several different treatment protocols with different preparation and administration methods, resulting in higher or lower concentrations of platelets. Some protocols use plasma that has either low or high concentrations of leukocytes (white blood cells).
- 3.7 This procedure is used for patients with early or mid-stage knee osteoarthritis.

Tom Clutton-Brock

Chairman, interventional procedures advisory committee

August 2018