

POINT TO DEBATE

INTRA-ARTICULAR INJECTIONS FOR KNEE OSTEOARTHRITIS: WHEN AND WHAT?

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Knee osteoarthritis (OA) is one of the common problems in elderly population that causes morbidity, physical limitation, and poor quality of life.

Many years ago Kellgren and Lawrence (K-L) have radiologically classified the knee OA severity into four grades and it is still valid:

Grade 1: Doubtful narrowing of joint space and possible osteophytic lipping

Grade 2: Definite osteophytes and possible narrowing of joint space

Grade 3: Moderate multiple osteophytes, definite narrowing of joint space, some sclerosis and possible deformity of bone contour

Grade 4: Large osteophytes, marked narrowing of joint space, severe sclerosis and definite deformity of bone contour¹.

When to Inject the Knee:

The time your patient's pain is not controlled by body weight reduction, lifestyle changes, medications and physiotherapy, you may recommended intra-articular injections to relieve pain and to postpone knee replacement surgery. There is almost worldwide consensus on therapeutic efficacy of injection for only mild to moderate knee OA (K-L grade 1, 2 and maybe 3) with no effect if used for severe forms (K-L grade 4). Also its application for sports-related cartilage damage has not yet evidenced^{2,3}.

What to Inject in the Knee:

Many intra-articular injections are recommended for the knee OA but corticosteroids, hyaluronic acid (HA) and platelet-rich plasma (PRP) are most

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commonly used.

Corticosteroid intra-articular injection relieves the OA symptoms fast, especially for acute episodes but it may increase the risk of infection in patients who are immunocompromised⁴. The patients also may not easily agree, for the fear they have about its side-effects. Nowadays the physicians increasingly avoid corticosteroid injection for knee OA.

HA injection has demonstrated moderate but significant efficacy (20%) for the knee OA versus placebo in terms of pain reduction and increasing the level of function. It reduces the need for opioid analgesics and nonsteroidal anti-inflammatory drugs and may delay joint replacement. It is not clear whether it can protect the knee cartilage. It should not be used for joint flare-up and swelling. Compared to corticosteroids, its clinical efficacy starts 1-4 weeks after injection but will remain for 6 and even 12 months². Many different brands of HA readymade syringes are available in the market.

Most of the randomized trials in knee OA, support a slightly greater effect of PRP in relieving the symptoms compared to HA injection; notably at the early stages of the disease. The platelets that are activated, release soluble mediators such as growth factors and cytokines, which induce complex interactions across tissues within the joint. PRP may promote chondrocyte proliferation and differentiation in vivo. It probably exerts an early anti-inflammatory effect, which may be chiefly mediated by inhibition of the NF- κ B pathway, a hypothesis that requires confirmation by further studies³. To prepare PRP, the patient's venous blood is drawn into special syringe and placed in a high speeds centrifuge that separates the platelets from other blood components. The concentrated platelet-rich plasma is then injected into the joint.

Knee joint intra-articular injection requires skilled specialist, and may be difficult in a non-swollen joint². If the syringe content is not injected

inside the joint space, it will have no effect and will cause severe pain.

Finally you may select PRP or HA for injection but the main point is to overcome the pain, that is adversely affecting daily living activities and mental health of your patient.

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