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Should your algorithm include plasma rich in growth factors in the light of its clinical efficacy and safety?

This letter is a response to the article, "An algorithm recommendation for the management of knee osteoarthritis in Europe and Internationally: A report from a task force of the European society for clinical and economic aspects of Osteoporosis and Osteoarthritis (ESCEO)" by Bruyere et al. [1] published in a recent issue of Seminars in Arthritis and Rheumatism. Despite the care, rigor, and seriousness of the authors' review, analysis, and, subsequent recommendations concerning the development of a treatment algorithm for the management of knee osteoarthritis (OA), we would like to make some suggestions that might enrich their report.

The authors, by not losing sight of the fact that knee OA is not only a cartilage disease but a whole-knee condition that involves other joint's structures such as bone, periarticular muscles, tendons, and ligaments [2], adopt a holistic approach. Consequently, the inclusion of an education, weight loss, and exercise program seems to be crucial [1]. The wide range of pharmacological molecules used as therapeutics in knee OA (although following the AAOS guideline and the Cochrane reviews, only tramadol and some NSAIDs have been shown to have clinical evidence unlike hyaluronic acid and SYSADOAS) are aimed at managing the clinical hallmark of the disease, namely, pain as well as other symptoms such as stiffness, swelling, and functional limitation and not at slowing down or arresting the progression of disease. An innovative biological approach to the treatment of knee OA is the application of Plasma rich in growth factors (PRGF) in intra-articular injections (3 injections on a weekly basis) [3]. PRGF is a platelet concentrate within a plasma suspension that conveys growth factors and an in situ-generated fibrin-matrix free of leukocytes and red cells that they all play an important role in the regulation of coagulation, inflammation, and tissue regeneration. Three randomized clinical trials have shown significantly higher reductions in knee pain and/or stiffness and a functional improvement in the short- and long-term treatment of symptomatic knee OA compared with a control group (hyaluronic acid) [4–6]. These clinical outcomes might be accounted for a chondroprotective, anti-inflammatory, and cell-phenotypic modulation effect of some growth factors within PRGF such as HGF, TGFB, FGF, and IGF1 [7] on joint tissues, thereby reducing pain and improving joint function. The equivocal clinical results obtained by platelet-rich plasma intra-articular injections are largely due to differences in some key biological properties of these therapies including platelet concentration, the presence or absence of leukocytes as well as timing and dosage applied by different medical teams among other factors [8,9]. In this respect, a systematic review [9], including the aforementioned clinical trials [4–6] and two other studies, was conducted to assess the efficacy and safety of a single type of platelet-rich plasma, namely, PRGF, illustrating that this autologous product besides being safe (lack of relevant adverse effects) exerts a significant knee pain reduction as the primary outcome (OMERACT-OARSI).

In the light of current clinical evidence [3–5,8–10], the application of three intra-articular injections of PRGF on a weekly basis might be pondered as one therapeutic option of mild to moderate knee OA and to take into consideration in author's algorithm treatment recommendation.

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