Platelet-Rich Plasma Versus Hyaluronic Acid

To the Editor:

In recent studies, platelet-rich plasma has been considered as a new medical treatment for joint diseases, but there have been few evidence-based studies about it. We have read the article entitled "Platelet-Rich Plasma Intra-Articular Injection Versus Hyaluronic Acid Viscosupplementation as Treatments for Cartilage Pathology: From Early Degeneration to Osteoarthritis" by Kon et al.[1] with interest. It was a valuable study. However, there are some limitations that we would like to point out:

1. Unfortunately, the study was not randomized, which can lower the level of evidence of the article.
2. It seems that patient allocation has some errors. In Table 1 in the article, there is mismatching among patients' body mass indexes, and in Table 2 the patients in each of the 3 groups were basically different with regard to visual analog scale and International Knee Documentation Committee scores, so the analysis comparing the 3 groups might have some bias (selection bias).
3. There were 3 injections of platelet-rich plasma in this study, and if hyaluronic acid was injected only once, subsequent statistical comparison between 1 injection of hyaluronic acid and 3 injections of platelet-rich plasma is not appropriate.

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Reference

1. Kon E, Mandelbaum B, Buda R, et al. Platelet-rich plasma intra-articular injection versus hyaluronic acid viscosupplementation as treatments for cartilage pathology: From early degeneration to osteoarthritis. *Arthroscopy* 2011;27:1490-1501.

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Authors' Reply

We thank Drs. Ahadi and Abtahi for the opportunity to revisit and clarify some aspects of our article on an innovative biological treatment approach. In this study we compared the efficacy of intra-articular injections of platelet-rich plasma (PRP) and viscosupplementation (hyaluronic acid [HA]) for the treatment of knee degenerative cartilage lesions and osteoarthritis.[1] In particular, the study involved 150 patients affected by cartilage degenerative lesions and early and severe osteoarthritis: 50 symptomatic patients were treated with 3 autologous PRP intra-articular injections and were evaluated prospectively at enrollment and at 2- and 6-month follow-up. The results obtained were compared with 2 homogeneous groups of patients treated with HA injections: one group was treated with injections of high–molecular weight HA; the other group was treated with low–molecular weight HA. Our findings suggested the potential to reduce pain and improve both knee function and quality of life with short-term efficacy, with PRP showing better findings especially in younger patients with lower degrees of chondral degeneration, whereas a worse outcome was obtained in more degenerated joints and in older patients, in whom results similar to those of viscosupplementation have been observed.

With regard to the arguments pointed out, most of them have actually already been discussed in the article, and they also received attention in an editorial in the same Journal issue, with significant indications from the Editors regarding the strength and weaknesses of our article.[2]

Among the limitations already twice underlined and recently again pointed out by Drs. Ahadi and Abtahi, there is the lack of randomization. In fact, this article has been classified as Level of Evidence II, and it is pretty obvious to say that a Level I randomized study would have been much more significant. We would also like to underline that this aspect, together with the lack of blinding, may actually be a major bias that could in fact determine part of the reported findings: differences in the groups and, even more, a placebo effect in patients undergoing the new fashionable biological treatment could play an important role in determining the positive findings in favor of PRP.

On the other hand, we also have to object that some of the critiques are groundless. We cannot talk about patient allocation errors, because patients have not been allocated to the groups by the physicians; we reported the experience of 3 different research groups comparing patients enrolled with the same inclusion criteria and treated with 3 different procedures. We performed an analysis to determine whether the groups were comparable, and we observed a 1.5-point difference in body mass index in one group. We reported this difference in the article so that the readers can evaluate whether this slight but statistically significant difference could also determine different clinical results. The mentioned difference in basal visual analog scale scores does not actually exist, because comparative analysis showed similar basal values; therefore, it is not true that this is a bias. The mentioned basal difference is true only for the International Knee Documentation Committee sub-