COMMENT

Response to Comment on: Platelet-rich plasma intracavernosal injections for the treatment of primary organic erectile dysfunction: a systematic review and meta-analysis of contemporary controlled studies

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We would thank the authors Victor and Melão for the positive evaluation of our manuscript [1], and for recognizing our efforts in conducting a comprehensive systematic review on the use of platelet-rich plasma (PRP) intracavernosal injections in patients with erectile dysfunction (ED) [2].

In recent years many contributions examined the potential of PRP in urological and non-urological conditions, in both preclinical and clinical setting [3]. Specifically, for ED treatment results of several trials have been published in form of full-text manuscript or conference abstract [3]. We applied the strictest methodological criteria in terms of study design, participants included, outcomes measured, and follow-up time to provide the most update and contemporary evidence of the real effect of PRP alone or combined with other established treatment options for primary organic ED [2]. In consequence, only seven controlled studies were finally considered, which included 641 patients of whom 320 received PRP alone or as a part of a multimodal treatment [4–10]. All such studies demonstrated an improvement or at least a tendency in erectile function recovery, in addition to prove that PRP injection is a feasible and safe procedure [4–10]. However, we also highlighted that limitations such as patients numbers, short-term follow-up, as well as the heterogeneity existing between studies on candidates selection, type and severity of ED, and technical aspects related to PRP preparation and administration might questioned the generalizability of our conclusions, and that higher level studies with standardized protocols are needed [2].

As an additional part of our work, we tried to generate a quantitative data synthesis using a meta-analytical approach [2]. Here, it was only possible to consider three studies, based on the same design, treatment options to be compared and outcomes reported, which separately tested PRP vs. placebo [4–6]. Results showed that patients receiving PRP presented with a higher International Index of Erectile Function (erectile function domain) - IIEF-EF score than patients receiving placebo: pooled mean difference (95% Confidence Interval) 2.99 (1.86, 4.13) after 1 month vs. 2.85 (1.61, 4.09) after 3 months vs. 3.21 (1.82, 4.60) after 6 months [2]. All these studies were randomized, double blind, placebo-controlled, recruited men with mild to moderate primary organic non-iatrogenic ED, and considered the same outcomes at the same time points [4–6]. However, one of them allows patients to continue phosphodiesterase-5 inhibitors throughout the trial [6]. In this study, despite the clinically meaningful improvement in the IIEF-EF score compared to baseline, no statistically significant difference between PRP and placebo patient groups was noted [6]. This choice has been justified by the authors as an attempt to faithfully replicate what happens to patients in real life [11].

The commentary by Victor and Melão particularly pointed the attention on this discrepancy, questioning our decision to pool the results by Masterson et al. in the meta-analysis, based on this important aspect [1]. For completeness, this was not the only difference existing among the three studies [4–6]. Indeed, Masterson and colleagues utilized a lower dose of PRP (5 mL) [6] than both Poulios and colleagues (10 mL) [5] and Shaher and colleagues (6 mL) [4]. Moreover, the time interval between PRP administration also differed: two weeks in Shaher et al. study [4] vs. one month in Masterson et al. [6] and Poulios et al. [5] studies.

We strongly agree with Victor and Melão considerations regarding caution in the interpretation of the results of the meta-analysis, driven by existing differences. However, we would specify that this was just an exploratory analysis, and not the hearth of our research; after having summarized the contemporary knowledge on PRP administration for ED treatment, we tried to provide a quantitative data synthesis too, pooling data coming from studies that more or less shared the same design and rationale that was possible only for three out of seven included studies. At the same time, we have meticulously underscored all potential limitations of each study individually taken, as well as those of our systematic review, accordingly. Taken together, results of the meta-analysis should not bring the message that a definitive PRP utilization is recommended but instead should be interpreted in the light that PRP can provides effective and encouraging results, so when higher level studies with longer follow up duration will be available more robust conclusion might be drawn.

We would thank again the authors for having shared with us their insightful thoughts and considerations on this important topic.

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AUTHOR CONTRIBUTIONS

Alessandro Tafuri: project development; Alessandro Tafuri and Andrea Panunzio: manuscript – original draft, and manuscript – review & editing. All authors have read and approved the final version of this manuscript.

COMPETING INTERESTS

The authors declare no competing interests.

ADDITIONAL INFORMATION

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