

## Comment on “Low-intensity Extracorporeal Shock Wave Therapy for Erectile Dysfunction: A Systematic Review and Meta-analysis”



Dear Editor:

We recently read with great interest the article published in *Urology* by Man Libo et al,<sup>1</sup> which described a systematic review and meta-analysis of low-intensity extracorporeal shock wave therapy (LI-ESWT) for erectile dysfunction (ED). Their meta-analysis included 9 randomized controlled trials (RCTs) to investigate the LI-ESWT for patients with ED, the therapeutic efficacy of LI-ESWT for patients with ED, and the relationship of therapeutic efficacy and different setup parameters and protocols. However, it may have the deviation in the direction of the effect of LI-ESWT due to the clinical heterogeneity of included studies.

First, the effect of LI-ESWT should be classified because of the mechanisms underlying the 3 types of ED are different. LI-ESWT is believed to be effective primarily by regenerating microvasculature and improving penile hemodynamics.<sup>2</sup> This could explain why it has been studied mainly in men with vasculogenic ED but not in men with neurogenic ED. In the study by Man Libo et al,<sup>1</sup> both Peyronie's disease (PD) and Chronic Pelvic Pain Syndrome (CPPS)-associated ED were also included. In this situation, in addition to local vascular function impairment, the erectile function will decrease with pain symptoms in CPPS-associated ED patients. And PD-associated ED patients are also related to penile deformity, painful erection, etc.<sup>3</sup> Therefore, the effect on PD/CPPS-associated ED patients is limited owing to their nonvasculogenic origin.

Moreover, with the International Index of Erectile Function (IIEF) of ED, we have the possibility to evaluate the clinically minimal change in the IIEF, which is much more related to a real success rate.<sup>4</sup> The minimal clinically important difference (MCID) is defined as the smallest difference in the IIEF of the erectile function domain that patients perceive as beneficial. For example, the MCID was estimated using IIEF question 7 (Q7): “Over the past 4 weeks, when you attempted sexual intercourse how often was it satisfactory for you?” The following responses are possible: 0, “Did not attempt intercourse”; 1, “Almost never or never”; 2, “A few times (much less than half the

time)”; 3, “Sometimes (about half the time)”; 4, “Most times (much more than half the time)”; and 5, “Almost always or always.” Minimal improvement in the anchor from baseline to week 12 is defined as a change from little or no satisfactory intercourse at baseline (either 1, “almost never,” or 2, “a few times”) to satisfactory intercourse sometimes (3, “sometimes”). The significant improvement in MCID is much more related to the improvement of LI-ESWT effect on ED, rather than simple improvement of IIEF.

According to the considerations outlined above, the studies included in the meta-analysis had substantial clinical heterogeneity; the outcome might have underestimated the role of LI-ESWT in organic ED. Instead, it would be more accurate to group depending on distinct pathogenesis when evaluating the therapeutic efficacy of LI-ESWT.

### References

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There are relatively few studies on using low-intensity extracorporeal shock wave therapy (LI-ESWT) for

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