

COMMENTARY & PERSPECTIVE

Shockwave: Does It Work Like Magic for Greater Trochanteric Pain Syndrome?

Commentary on an article by Silvia Ramon MD, PhD, et al.: "Focused Shockwave Treatment for Greater Trochanteric Pain Syndrome. A Multicenter, Randomized, Controlled Clinical Trial"

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The study by Ramon et al. is an important, clinically relevant investigation that highlights the effectiveness of combining electromagnetic-focused extracorporeal shockwave treatment (F-ESWT) with a home exercise protocol to treat greater trochanteric pain syndrome (GTPS).

GTPS is one of the most common orthopaedic conditions. Nonoperative treatments include weight management, nonsteroidal anti-inflammatory drugs (NSAIDs), home exercise, corticosteroid injections, and medical shockwave treatment^{1,2}. However, randomized high-quality clinical trials comparing the effectiveness of various treatments are lacking. The purpose of this multicenter, randomized, controlled clinical trial was to evaluate the effectiveness and safety of electromagnetic F-ESWT in patients with GTPS. Researchers from 3 centers (2 in Italy and 1 in Spain) enrolled 103 patients with unilateral GTPS (tendinopathy or bursitis, or both) diagnosed clinically and radiographically (with sonography or magnetic resonance imaging [MRI]). The patients followed the same daily home-specific exercise program for 24 weeks, but the treatment group received 3 weekly sessions of medium-energy (0.20-mJ/mm²) F-ESWT while the control group received 3 weekly sessions of 0.01-mJ/mm² F-ESWT (the lowest energy of the device). The study demonstrated significant reduction of pain (as recorded with a visual analogue scale [VAS]) at 2 months and better global results (as measured with the Harris hip score [HHS], Lower Extremity Functional Scale [LEFS], EuroQoL-5 Dimensions Questionnaire [EQ-5D]), and Roles and Maudsley (RM) treatment satisfaction scale up to 6 months after the last session in the treatment group.

This is encouraging for both patients and clinicians.

First, GTPS is usually a chronic condition with flare-ups that might require frequent nonoperative treatment to reduce the high level of pain and improve life quality. When NSAIDs and physiotherapy stop working, more invasive treatments are usually considered. Although corticosteroid injections usually provide immediate short-term pain relief that lasts up to 3 months, it does not usually last >12 months³. The Level-I evidence from the current study indicates that F-ESWT is another nonoperative management modality to consider for patients with GTPS because it may provide significant pain reduction and improved quality of life.

Second, from the surgeon's perspective, this current study provides validated outcome measurements regarding pain reduction and functional status improvement up to 6 months after treatment. Thus, when counseling patients with GTPS, we might advocate a nonoperative treatment that could be effective in the mid-term.

There are several limitations of this study, including a lack of data on compliance with physiotherapy and the potential that the study was underpowered to detect significant differences in the secondary outcomes and interactions. In addition, although body mass index (BMI) was not considered to be associated with GTPS in a previous cross-sectional study², longitudinal studies are necessary to elucidate whether obesity leads to or is caused by GTPS². Therefore, the decision not to control for BMI in the comparisons between the treatment and control groups in the current study could have confounded the outcomes. Another limitation of the current study is the lack of clarification regarding who made the decision to choose sonographic imaging or MRI, whether there was consistency among the radiologists from the 3 independent centers, and the sonographic:MRI ratio in the treatment versus the control group. Sonographic results are operator-dependent, and accuracy and consistency were definitely crucial in the current study. A recent systematic review documented the lack of clear and consistent definitions of the most common pathologic sonographic findings in GTPS and urged standardized sonographic procedures and definitions to enhance the reliability of future sonographic studies evaluating GTPS⁴. Although not part of the current study design, comparison of repeat sonographic or MRI examinations after 6 months between the treatment and control groups would enable a powerful statement supporting the efficacy of F-ESWT.

The strengths of the study are numerous and include the multicenter, prospective, randomized, controlled design with validated outcome measurements (VAS and functional assessment).

In summary, the authors should be congratulated for their work. It is never easy to perform a Level-I randomized, controlled, clinical trial with multicenter collaboration. The study design is sound, with results that are encouraging and clinically relevant.

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