

Invited commentary on “Extracorporeal shockwave therapy improves pain and function in subjects with knee osteoarthritis: a systematic review and meta-analysis of randomized clinical trials”

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Different electrophysical agents are used for therapeutic purposes [1] and the therapeutic application of electromagnetic energy is commonly known as electrotherapy. There are different types of electrotherapy modalities that are used for treating various musculoskeletal injuries and conditions [2] and the use of these modalities varies in the clinical practice.[3] in addition, there are some other types of therapy such as laser therapy, therapeutic ultrasound and shockwave therapy that do not involve application of electrical energy [1]. Shockwave therapy involves application of inaudible, high-energy sound waves [4], which increase flow of the blood to the injured tissues and thus helps in the healing process . Shockwave therapy is given in different medical conditions[5–7] such as knee osteoarthritis.[8]

A recent systematic review and meta-analysis by Avendaño-Coy et al [9] have evaluated the efficacy of extracorporeal shockwave therapy (ESWT) in knee osteoarthritis. The authors have appraised the latest evidence whether the therapy results in the improvement in the functionality and reduction of pain in patients with knee osteoarthritis. Based on the pooled data extracted from 14 randomized clinical trials involving 877 knees in 782 patients, the authors have reported that the ESWT reduces pain (moderate quality of evidence) and moderately improves the movement and function of knee (very low quality evidence).[9]

Osteoarthritis is very painful and debilitating condition and its burden is increasing globally [10] About 85% cases of osteoarthritis include knee osteoarthritis, which results in disability and is associated with high cost of health and social care.[11] These factors have serious implications not only for patients but also for their family members and other informal carers as well as the health and care service providers. The findings of Avendaño-Coy et al [9] provide latest evidence about the effectiveness of ESWT in knee osteoarthritis, which could help clinicians and patients in making informed choices whilst considering the application of ECSWT in managing osteoarthritis of knee.

Provenance and peer review

Invited Commentary, internally reviewed.

Declaration of competing interest

Author declared no conflict of interest.

Author contribution

All authors were involved in the conception and planning of this work. S.G.S.S. drafted the manuscript. S.F.H.S. and A.F. reviewed the manuscript for critical input. All authors have approved the final manuscript.

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References

- [1] T. Watson, E. Nussbaum, eds., *Electrophysical Agents: Evidence-based Practice*, Thirteenth, Elsevier, 2020.
- [2] S.G.S. Shah, A. Farrow, A. Esnouf, Availability and use of electrotherapy devices: A survey, *Int J Ther Rehabil.* 14 (2007) 260–264. <https://doi.org/10.12968/ijtr.2007.14.6.23895>.
- [3] S.G.S. Shah, A. Farrow, Trends in the availability and usage of electrophysical agents in physiotherapy practices from 1990 to 2010: a review, *Phys Ther Rev.* 17 (2012) 207–226. <https://doi.org/10.1179/1743288X12Y.0000000007>.
- [4] National Institute for Health and Clinical Excellence, *Treating chronic plantar fasciitis using shockwave therapy*, London, 2009. <https://www.nice.org.uk/guidance/ipg311/resources/treating-chronic-plantar-fasciitis-using-shockwave-therapy-pdf-312696253> (accessed October 31, 2020).
- [5] C.-J. Wang, J.-H. Cheng, C.-C. Huang, H.-K. Yip, S. Russo, Extracorporeal shockwave therapy for avascular necrosis of femoral head, *Int J Surg.* 24 (2015) 184–187. <https://doi.org/10.1016/j.ijsu.2015.06.080>.
- [6] S. Thiele, R. Thiele, L. Gerdesmeyer, Lateral epicondylitis: This is still a main indication for extracorporeal shockwave therapy, *Int J Surg.* 24 (2015) 165–170. <https://doi.org/10.1016/j.ijsu.2015.09.034>.
- [7] J. Holfeld, D. Lobenwein, C. Tepeköylü, M. Grimm, Shockwave therapy of the heart, *Int J Surg.* 24 (2015) 218–222. <https://doi.org/10.1016/j.ijsu.2015.09.070>.
- [8] H. Ma, W. Zhang, J. Shi, D. Zhou, J. Wang, The efficacy and safety of extracorporeal shockwave therapy in knee osteoarthritis: A systematic review and meta-analysis, *Int J Surg.* 75 (2020) 24–34. <https://doi.org/10.1016/j.ijsu.2020.01.017>.
- [9] J. Avendaño-Coy, N. Comino-Suárez, J. Grande-Muñoz, C. Avendaño-López, J. Gómez-Soriano, Extracorporeal shockwave therapy improves pain and function in subjects with knee osteoarthritis: a systematic review and meta-analysis of randomized clinical trials, *Int J Surg.* 82 (2020) 64–75. <https://doi.org/10.1016/j.ijsu.2020.07.055>.
- [10] M. Kloppenburg, F. Berenbaum, Osteoarthritis year in review 2019: epidemiology and therapy, *Osteoarthritis Cartil.* 28 (2020) 242–248. <https://doi.org/10.1016/j.joca.2020.01.002>.
- [11] D.J. Hunter, S. Bierma-Zeinstra, Osteoarthritis, *Lancet.* 393 (2019) 1745–1759. [https://doi.org/10.1016/S0140-6736\(19\)30417-9](https://doi.org/10.1016/S0140-6736(19)30417-9).