Recommendation

27. There is insufficient evidence to recommend for or against extracorporeal shock wave therapy for spasticity management.
(Neither for nor against | Reviewed, New-added)

Discussion

Extracorporeal shockwave therapy (ESWT) is a non-pharmacological intervention used for lithotripsy, and more recently musculoskeletal treatments, including spasticity. The two recognized forms include focused ESWT (fESWT), which uses electrohydraulic, electromagnetic, or piezoelectric energy to deliver target pressure at the treatment site, and radial ESWT (rESWT), which is generated pneumatically and disperses the pressure waves indirectly to the treatment site. ESWT is posited to have immediate effects on reducing spasticity, thereby facilitating subsequent therapy; however, the mechanism behind the effects remains relatively unclear.

Low-quality evidence from an SR of 13 RCTs by Ou-Yang et al. (2023) found that ESWT statistically improved spasticity as measured by the MAS, in the short-term (1-2 weeks after treatment), mid-term (>3 and <4 weeks after treatment), and long-term (up to 12 weeks after treatment) follow-up periods, compared with sham ESWT or conventional physiotherapy.(143) The included studies evaluated patients (n=677) who received ESWT or were in a control group of either sham ESWT or conventional physiotherapy.(143) Four studies used fESWT, 7 rESWT, and 2 did not delineate a type of ESWT. Of studies using MAS as an outcome measure, 11 were included in the short-term analysis (n=533), 9 in the mid-term analysis (n=421), and 4 in the long-term analysis (n=285). Ten studies evaluated the effects on the upper limbs, and 4 evaluated the lower limbs. Despite the reported statistical difference in MAS scores at all three timepoints, the MD at short-term (MD: -0.43; 95% CI: 0.77-0.10; p<0.01), mid-term (MD: -0.50; 95% CI: -0.81– -0.20; p<0.01), and long-term (MD: -0.81; 95% CI: -1.15– -0.47; p< 0.01) effects were interpreted by the Work Group as not clinically significant. The applied shock wave frequencies differed, as did the frequency of the therapies. The timing of therapy following the stroke was varied. The authors of the SR did not review the reported complications of the RCTs' interventions.(132, 143)

Hsu et al. (2022) performed an NMA to evaluate the comparative effectiveness of botulinum toxin and ESWT on the WMD of MAS reduction in the short- (at or before the 6th-week post-treatment) and mid-term (between the 7th- and 12th-week post-treatment).(132) Of the 33 included RCTs (n=1,930), 10 compared rESWT with control, 4 compared fESWT with control, 1 compared fESWT with rESWT, and 1 compared rESWT with botulinum toxin, while the remaining 17 compared botulinum toxin only with a control. The control groups could have consisted of sham ESWT, physical therapy, oral anti-spasticity medication, or, in the case of botulinum toxin trials, saline injection. In the short-term NMA, Hsu et al. (2022) found that botulinum toxin (WMD: -0.69; 95% CI: -0.87– -0.50), fESWT (WMD: -0.36; 95% CI: 0.69–0.03), and rESWT (WMD: -0.62;