통증 및 근골격재활

게시일시 및 장소 : 10 월 18 일(금) 08:30-12:20 Room G(3F)

질의응답 일시 및 장소 : 10 월 18 일(금) 10:00-10:45 Room G(3F)

P 1-99

The effect of ESWT to pain intensity and PPT on MPS in neck and shoulder:Meta-analysis

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Purpose

Extracorporeal shock wave therapy(ESWT) has been widely used in myofascial pain syndrome(MPS) to date. Our study is first trial to investigate the effect of ESWT on MPS in neck and shoulder.

Methods

A comprehensive search was done via online databases (PubMed, EMBASE and Web of Science) until 30, May, 2019 to select the randomized controlled trials(RCTs). Cochrane handbook used to evaluate the methodological quality of the included RCTs. Main outcomes were selected associated with pain intensity(VAS and other pain scale with with self-estimated 10cm points) and pressure pain threshold(PPT). This study was not yet registered with PROSPERO. All statistical analyses were performed using RevMan5.3. For outcomes that were measured using different scales and metric, we used the standardized mean difference (SMD) with 95% CI.

Results

Eleven RCTs were included finally. Results proposed that, at post-intervention, ESWT showed medium effect size on improving pain intensity(p=0.01, SMD -0.70, 95% CI -1.24 to -0.16, Fig1), and PPT(p=0.03, SMD 0.67, 95% CI 0.06 to 1.28, Fig2) in patients with MPS compared with other treatments. Subgroup analysis for the comparison between ESWT and sham-ESWT showed that ESWT had larger effect size on alleviating pain intensity(p<0.00001, MD -2.02, 95% CI -2.86 to -1.76, Fig3) and PPT at post-intervention(p<0.00001, SMD 1.39, 95% CI 0.82 to 1.96, Fig3) over sham-ESWT than when compared with other treatments. At follow up, No statistically significant improvement was shown on pain intensity(p=0.18, SMD -0.38, 95% CI -0.94 to 0.17, not shown).

Discussion

Our result showed that ESWT reduced pain intensity and improving PPT in patients with MPS compared to other useful treatments at post-intervention. At follow-up, there is no significant effect size of ESWT group to control pain intensity over other treatments. Most included RCTs were done as control groups under other interventions such as dry needlding, ultrasound, low-energy laser therapy, which had some evidence about the effectiveness proven by previous meta-analyses. Therefore, we note that the SMD values of our meta-analysis can be underestimated compared to only sham-ESWT as a control group. Recently, a various hypothesis on the effectiveness of ESWT is presented, which can provide a good clue to solve the cause of MPS. But, we have certain hypotheses regarding how MPS is formed, it remains unclear how ESWT may affect them. In this regard, our result on the therapeutic effect of ESWT for MPS will clinically serve as a meaningful bridge to enhance further understanding of MPS and ESWT, respectively.

Conclusion

Our result showed that significantly medium effect size in improving pain intensity and PPT at post-intervention. Large RCT will be needed to compare the effectiveness between other treatments and ESWT. Network meta-analysis is a good trial for further study about managing MPS symptom.

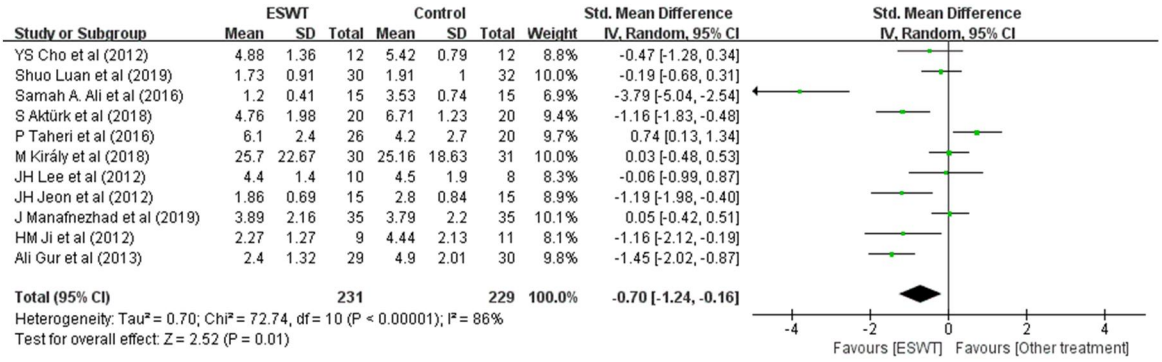

Figure 1. The effect of ESWT on pain intensity at post-intervention

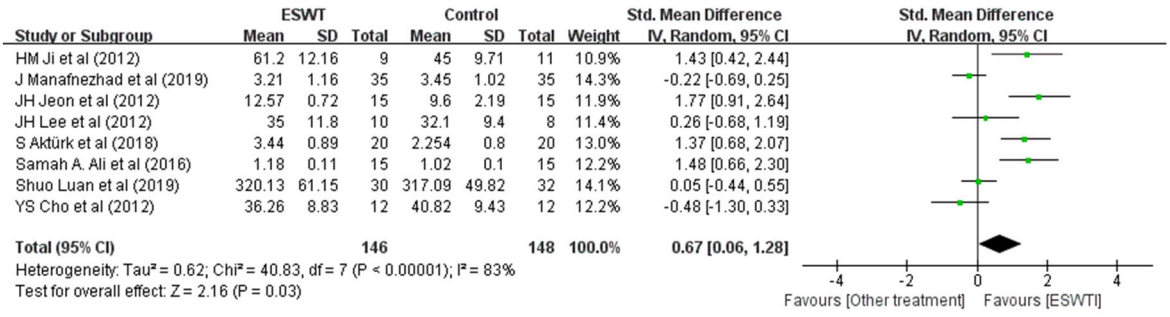

Figure 2. The effect of ESWT on PPT at post-intervention

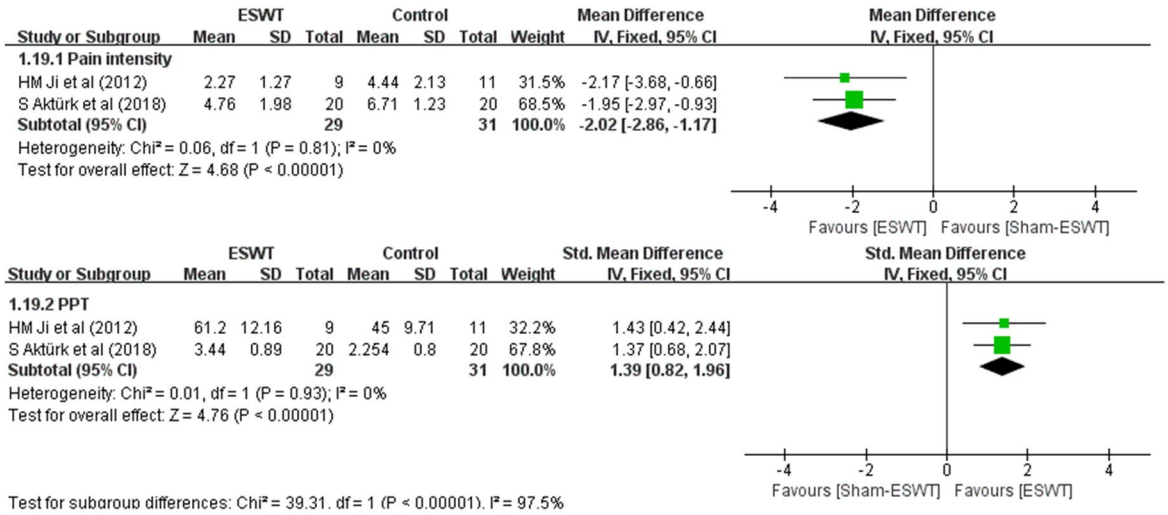

Figure 3. The effect of ESWT vs Sham-ESWT on pain intensity and PPT at post-intervention