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Comparative study of mud and peat intervention relieving chronic pain in shoulder: A pilot study

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Introduction

Peat is made when plant materials can not be completely decayed in acidic and anaerobic conditions. Mud is natural product that consists of a water and any combinations of different kinds of soil produced from geological processes. Peat and mud have been used as therapeutic options for musculoskeletal diseases in many European countries. Especially, plentiful humic substance in peat is suggested as mechanism of anti-inflammatory effects of peat. The aim of this study is to compare the effects of peat and mud on patients with chronic shoulder pain.

Methods

Twenty four patients with chronic shoulder pain were randomly allocated to two groups after signing the informed consent. Mud is applied to 12 participants, and peat is applied other 12 participants on both shoulders. Patients with shoulder replacement surgery, intra-articular steroid injection to shoulder in one month, and current systemic infection were excluded. Mud or peat intervention was applied a total of 8 sessions over 5 days, and each session lasted for 20~25 minutes. The mud or peat temperature was maintained at 40 to 43 °C using one infrared lamp per shoulder. Participants were asked visual analog scale (VAS) and shoulder pain and disability index (SPADI). SPADI is composed of pain scale (0~50) and disability scale (0~80), and total score is 130. Ultrasound images were checked to see the changes of shoulder structures. All participants were evaluated before and after the intervention.

Results

VAS and SPADI were significantly decreased after the intervention in both groups (p value < 0.05). Changes in VAS were 2.75 ± 1.14 and 4.00 ± 2.26 in peat and mud groups, respectively. Effect size between two groups was medium (Cohen's d=0.70). However there was no significant difference. Furthermore, changes in SPADI were 31.08 ± 17.63 and 43.58 ± 29.22 in peat and mud groups without significance, and effect size of SPADI was medium (Cohen's d=0.52). If pain scale and disability scale in SPADI were analyzed separately, both reduced after the mud and peat intervention respectively with statistical significance. In the analysis of changes of disability scale, effect size between mud and

peat intervention group (Cohen's d=0.57) was larger than effect size in pain scale analysis (Cohen's d=0.40). Ultrasound exam on both shoulders showed a decrease in the thickness of the subacromial subdeltoid bursa in some patients.

Conclusion

In conclusion, both peat and mud can be considered as supportive therapy options on chronic shoulder pain, and peat may have better effects on pain relief and shoulder function.

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