International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Effect of Dry Cupping on Physical Symptom of Headache in Premenstrual Syndrome Among Females Within 18-26 Years: A Randomised Clinical Trial

Saima Shaikh[1], Ashwini Bulbuli[2]

[1]MPT OBG, KAHER Institute of Physiotherapy
[2]MPT OBG, Assistant Professor, Department of OBG Physiotherapy, Kaher Institute of Physiotherapy

ABSTRACT

BACKGROUND: Premenstrual syndrome or PMS are a group of psycho neuroendocrine condition whose cause is not known often experienced prior to menstruation. PMS symptoms are varied with prevalence of premenstrual headache of nearly 43%. Numerous evidences for management of PMS in general are available however literature on specific management of premenstrual headache is unavailable.

OBJECTIVE: To determine the effect of dry cupping on physical symptom of headache in the premenstrual syndrome using Daily Record of Severity of Problems (DRSP), Headache Impact test (HIT-6) and Visual Analogue Scale (VAS)

METHODS: Females within 18-26 years who complained of premenstrual headache and were willing to participate were included. Subjects were recruited and randomly divided into two groups. Outcome measures used were Daily Record of Severity of Problems (DRSP) and Headache Impact test (HIT-6). Visual Analogue Scale (VAS) was used pre and post intervention. Group A was given cervical traction whereas group B was given dry cupping and cervical traction. DRSP and HIT-6 were recorded for four cycles.

RESULTS: The mean of demographic data suggested that both the group were homogenous at the baseline in terms of age and BMI. HIT-6 mean scores when compared from baseline to 2nd follow up for both the groups demonstrated statistically significant outcome. This improvement was maintained for over a period two cycles in group B. DRSP and VAS mean scores were compared from baseline to post intervention showed high statistically significant improvement (p=0.0001)

CONCLUSION: The study concludes that dry cupping is an effective tool for immediate to long term reduction of premenstrual headache symptoms.

Keywords: premenstrual syndrome, headache, dry cupping, females

INTRODUCTION

A group of menses related cyclic and chronic disorder presenting in the form of physical and emotional symptoms experienced by most females in the last 2 weeks of the menstrual cycle.[1] These symptoms may range from mild to severe and debilitating. If the symptoms are severe enough to disrupt quality of life and require medical intervention they are termed as 'premenstrual syndrome' or PMS.[2] Mild symptom

experienced by females in the reproductive age group is considered physiological.[3] The concept of abnormally high oestradiol/ progesterone ratio may be attributed to symptoms of premenstrual syndrome.[4] Expression of these symptoms may be between two to fourteen days. These symptoms may aggravate substantially 6 days prior and peak 2 days prior to the occurrence of menstrual flow. Anger and irritability are most common and frequently reported of all complains starting slightly earlier than others.[5] There are varied emotional, behavioural and physical symptoms experienced. Physical symptoms may include bloating, weight gain, puffiness (of face, abdomen or finger) headache, change in appetite, skin changes, constipation or diarrhoea, general exacerbation on muscle and joint aches or pains.[2]

The prevalence of premenstrual headache also called as 'menstrual migraine' is nearly 43%.[6] The International Headache Society (IHS) has given classification of menstrual migraine as a condition occurring between 2 days prior and to the last day of menses ; the peak occurrence is between 2 days pre to two days post the onset of menstrual cycle.[7] Headaches may present itself as bifrontal, hemi cranial, bitemporal, behind eye with or without associated visual symptoms. Water retention is considered to be a sole cause for premenstrual headache.[8] Cupping therapy is one of the key components of ancient Chinese medicine and was used historically for treatment of numerous conditions.[9] Dry cupping therapy or retained cupping or static cupping is the method of application of cup over the skin by creating negative pressure inside the cup.[10] Cupping therapy brings about microenvironmental changes due to skin stimulation which could transform biological signals bringing about activation of neuroendocrine immune system. This theory given by Guo et al is known as immunomodulation theory.[11] Therefore due to these potential benefits of dry cupping on various systems this study was undertaken to find out the effectiveness of dry cupping therapy on physical symptom of headache in premenstrual syndrome.

MATERIALS AND METHOD

Study design and sampling:

It was an experimental randomised clinical trial. The sampling method adopted was non probability convenience sampling.

Inclusion/ Exclusion criteria:

Women within 18-26 years with complain of premenstrual headache and regular menstrual cycle. Subjects who gave consent and were willing to participate were included in the study. Subjects were excluded if they had sensitive skin or sensory issues. Those on pain medications, neurological or psychological problems and with history of head, neck and upper back trauma were also excluded from the study. Procedure: Ethical clearance was obtained from Institutional Ethical Review Committee (IERC). 48 subjects meeting the inclusion criteria and willing to participate were included after obtaining written consent. Subjects after recruitment were randomly allocated in to two groups by lottery method. Baseline data along with demographic details were taken of each participant. Patient was explained in detail about the intervention before commencement.

Group A was given two sessions of cervical traction on intermittent mode for 20 minutes (10 seconds hold, 10 seconds release) in the premenstrual phase for one cycle. Patient was placed in supine position with neck flexed 20°-30° and pull rope at an angle of 60°. Group B was given dry cupping therapy along with cervical traction on posterior neck and upper back region for 10-15 minutes. The intervention was given

for 2 sessions for one cycle. The position for intervention was either prone lying with forehead supported on pillow/towel roll or sitting with forehead support according to subject's comfort. Visual analogue scale (VAS) scoring was taken pre and post intervention for both the groups during each session. Daily Record of Severity of Problems (DRSP) and Headache Impact test (HIT-6) scoring was documented at baseline, during intervention and two months follow up. No intervention was given during follow up.

OUTCOME MEASURES

Visual analogue scale (VAS)[12]

Subject marks the severity of pain perceived on a 10cm line. The extreme points of the line denoting no pain and maximum pain perceived. The investigator measures the marked point and severity noted on a scale of 0-10.

Daily Record of Severity of Problems (DRSP)[13]

It is a subjective scale consisting of 11 questions rated on 6 point likert scale depending on severity of symptoms experienced everyday for over a period of one month. The domains of symptoms included are psychological, physiological and physical. Additional 3 questions includes components like quality of life (QoL), activity limitation and participation restriction in the given course of time due to pre or perimenstrual issues.

Headache Impact test (HIT-6)[14]

Headache impact test scale is designed to determine and communicate the way subject feels and limits her activities because of headache. The symptoms are to be rated retrospectively by subjects based upon the impact of headache experienced in the past four weeks. The scale consists of six questions which are rated on a 5 point likert scale in increasing order of severity from 'never' to 'always'. The score ranges from 36-78. The score of 49 or less suggest that the headache has little or effect on life whereas a score of 60 or more suggests that it has severe impact on life.

STATISTICAL ANALYSIS

Analysis was performed using SPSS version 20 software. Statistical measures like mean and standard deviation were used. Normality of data was assessed by Kolmogorov Smirnov test. Homogeneity of demographic data was determined by independent t test. Comparison of VAS score, DRSP and HIT-6 at different time periods was done using t- test. Probability value less than 0.05 was considered significant. Probability values less than 0.001 considered of high significance.

RESULTS

Mean age of subjects in group A was 22.96±1.94 whereas mean age of those in group B was 22.96±2.40. The p value for the difference between the groups was 0.29. Mean BMI of subjects in group A was 22.78±3.12 whereas for those in B was 22.44±2.50. The p value for in between group difference for BMI distribution was 0.67. The data followed normal distribution for all the outcome measures used. Therefore parametric tests were applied. HIT6 scores were compared between groups at different time points. When HIT-6 scores of both the groups were compared at different time points, for group A the mean difference from baseline to intervention was 12.25±7.17, from intervention to 1st follow up was 0.04±5.57, from intervention to 2nd follow up was -5.08±6.57 and from 1st follow up to 2nd follow up was -5.08±6.57. However the p values for these changes were 0.001, 0.97, 0.009 and 0.004 respectively. For group B the mean change in score from baseline to post intervention was

10.04±6.74, from post intervention to 1st follow up was 1.88±6.17 and from 1st follow up to 2nd follow up was -2.59±7.69. The p values for the same were 0.001, 0.14 and 0.11 respectively. DRSP scores for between group comparison at different time points was done. DRSP and VAS mean scores were compared from baseline to post intervention showed high statistically significant improvement (p=0.0001)

DISCUSSION

There are studies for management of premenstrual syndrome symptoms collectively but this study was first of its kind undertaken specifically to determine the effectiveness of an intervention on physical symptom of headache in the premenstrual period. Luigi Bianchin et al conducted study to determine perimenstrual headache, pain pattern during the cycle and for verification of its relationship with physical, psychological and lifestyle factors. The prevalence of peri menstrual headache was found out to be 64.4% with higher prevalence among adolescent girls. Also the study concluded that the premenstrual headache was closely interrelated with other pain symptoms like dysmenorrhoea.[6] Therefore DRSP score improvement was observed along with HIT-6 scores post intervention in both the groups. Evidence suggests correlation between premenstrual syndrome and aggravation of headache symptoms in the premenstrual period. This headache aggravation during the premenstrual period is described by many authors as 'menstrual migraine'.[15] Simone Horwitz et al. states that reduction in length of muscles around the neck and upper back results in increased risk of peri menstrual migraine, reduction in neural mobility and increased stiffness in the cervical spine.[16] Cervical traction is proved to be effective tool for reduction of neck muscle stiffness during various headache conditions. Charly Gaul et al. states that multidisciplinary treatment programs are more reasonable and efficient for management of headache disorder.[17] However further stating that therapies are more dependent on country specific health care system than on clinical needs or scientific data.[18] Therefore the intervention protocol in our study was designed accordingly. There is a RCT which states that cupping therapy along with physiological effects like increase in surface skin temperature also bring about reduction in subjective pain perception.[19] Also hormonal changes during premenstrual period affect perception of pain along with mood, physiological and physical symptoms.[6] Evidences are available suggesting effect of cupping in immunomodulation, pain and lymphatic drainage. Considering these beneficial physiological effects of dry cupping along with its impact on vascular function dry cupping therapy was opted as a treatment modality for management of physical symptom of headache in premenstrual syndrome.

CONCLUSION

We conclude that dry cupping therapy along with cervical traction showed better outcomes when compared to cervical traction alone. Hence is an effective tool for immediate to long term (for two cycles) reduction of premenstrual headache symptoms.

References:

1. Lori M, Dickersen, Pamela J, Mazyck, Melissa H, Hunter. Premenstrual syndrome. Americal family physician. 2003; 67(8):1-15
2. Kaushik D, Sheetal D, Sharma L, Ajmera P. Pre menstrual syndrome among females.
3. Yonkers KA, O'Brien PS, Eriksson E. Premenstrual syndrome. The Lancet. 2008 Apr 5;371(9619):1200-10
4. Frank R. The hormonal causes of premenstrual tension. Arch Neurol Psychiatry. 1931; 26:1053–57

5. Pearlstein T, Yonkers K, Fayyad R, Gillespie J. Pretreatment pattern of symptom expression in premenstrual dsyphoric disorder. J Affect Disord. 2005; 85:275–82.
6. Bianchin L, Bozzola M, Pier AB, Bernasconi S, Bona G, Buzi F, De Sanctis C, De Sanctis V, Tonini G, Radetti G, Rigon F. Menstrual cycle and headache in teenagers. The Indian Journal of Pediatrics. 2018:1-9
7. Dzoljic E, Sipetic S, Vlajinac H, et al. Prevalence of menstrually related migraine and nonmigraine primary headache in female students of Belgrade University. Headache. 2002;42(3):185–93
8. Greene R, Dalton K. The premenstrual syndrome. British Medical Journal. 1953 May 9;1(4818):1007
9. Christopoulou-Aletra H, Papavramidou N. Cupping: an alternative surgical procedure used by Hippocratic physicians. J Altern Complement Med. 2008; 14(8): 899–902
10. Al-Bedah AM, Aboushanab TS, Alqaed MS, Qureshi NA, Suhaibani I, Ibrahim G, Khalil M. Classification of cupping therapy: a tool for modernization and standardization. Journal of Complementary and Alternative Medical Research. 2016 Jun 23:1-0.
11. Guo Y, Chen B, Wang DQ, Li MY, Lim CH, Guo Y, et al. Cupping regulates local immunomodulation to activate neuralendocrine-immune worknet. Complement Ther Clin Pract 2017 Aug 31;28:1e3
12. Begum R. VALIDITY AND RELIABILITY OF VISUAL ANALOGUE SCALE (VAS) FOR PAIN MEASUREMENT. jmcrr. 2019 Nov 8;2(11)
13. Endicott J, Nee J, Harrison W.Daily Record of severity of problems (DRSP):reliability and validity. Archives of wome's mental health.2006 Jan 1;9(1):41-9 Ferragut-Garcías A, Plaza-Manzano G, Rodríguez-Blanco C, Velasco-Roldán O, Pecos-Martín D, Oliva-Pascual-Vaca J, Llabrés-Bennasar B, Oliva-Pascual-Vaca Á. Effectiveness of a treatment involving soft tissue techniques and / or neural mobilization techniques in the management of tension-type headache: a randomized controlled trial. Archives of physical medicine and rehabilitation. 2017 Feb 1; 98 (2): 211-9
14. Facchinetti F, Neri I, Martignoni E, Fioroni L, Nappi G, Genazzani AR. The association of menstrual migraine with the premenstrual syndrome. Cephalalgia. 1993 Dec;13(6):422-5
15. Horwitz S, Stewart A. An exploratory study to determine the relationship between cervical dysfunction and perimenstrual migraines. Physiotherapy Canada. 2015 Jan;67(1):30-8
16. Choi SY, Choi JH. The effects of cervical traction, cranial rhythmic impulse, and Mckenzie exercise on headache and cervical muscle stiffness in episodic tension-type headache patients. Journal of physical therapy science. 2016;28(3):837-43
17. Gaul C, Liesering-Latta E, Schäfer B, Fritsche G, Holle D. Integrated multidisciplinary care of headache disorders: A narrative review. Cephalalgia. 2016 Oct;36(12):1181-91
18. Chi LM, Lin LM, Chen CL, Wang SF, Lai HL, Peng TC. The effectiveness of cupping therapy on relieving chronic neck and shoulder pain: a randomized controlled trial. Evidence-Based Complementary and Alternative Medicine. 2016;2016