



# Role of contemporary therapy in treatment of dysmenorrhea

Rajni Mittal

[rajnimttl@yahoo.com](mailto:rajnimttl@yahoo.com)

North Delhi Municipal Corporation Medical College and Hindu Rao Hospital, Delhi

## ABSTRACT

*Dysmenorrhea affects women during reproductive years and is a cause of frequent absenteeism. Conventionally dysmenorrhea has been treated by NSAIDs and oral contraceptives. They have a failure rate of >15% and are limited by side effects and may be contraindicated in others. People have used contemporary therapies for several years to relieve pain during menses and associated symptoms. These therapies include herbal therapy, heat, yoga and physiotherapy. Each one of them is effective in relieving pain during menses and effects are almost comparable to NSAIDs and have fewer side effects. Further research is required to recommend them as first-line treatment in dysmenorrhea.*

**Keywords**— Dysmenorrhea, Contemporary therapy, Herb, Ginger, Physiotherapy, Yoga, Heat

## 1. INTRODUCTION

Dysmenorrhea is characterized by pain in the lower abdomen or pelvis occurring before or during menstruation.<sup>1</sup> As a common gynaecological problem, dysmenorrhea affects women during reproductive years and all races and affects their quality of life. Dysmenorrhea is usually categorized into two types as follows: primary dysmenorrhea (PDM) and secondary dysmenorrhea.<sup>1</sup> PDM is defined as the painful menses with spasmodic cramping in the lower abdomen, in the absence of any discernable macroscopic pelvic pathology.<sup>2</sup> Various methods have been used to treat dysmenorrhea. Dysmenorrhea is conventionally treated with nonsteroidal anti-inflammatory drugs (NSAIDs) or oral contraceptive pills (OCPs)<sup>3</sup>, and research evidence supports their efficacy.<sup>4,5</sup> However, NSAIDs and OCPs have limitations because they may not be effective in some women (with an estimated failure rate of >15% for NSAIDs)<sup>3,6</sup>, there may be contraindications or adverse effects in others, some may not prefer to use any medications. Various contemporary therapies are available to treat dysmenorrhea, these include herbs, heat, physiotherapy, physical activity and yoga.

## 2. HERBAL THERAPY

Many women use herbs to alleviate pain during menses. Gholami, in a systematic review, analysed 24 studies on effects of herbs on dysmenorrhea and found that thyme (*Thymus vulgaris*), chamomile tea (*Matricaria chamomilla*), St. John's wort (*Hypericum perforatum*), fennel (*Foeniculum vulgare*), cinnamon (*Cinnamomum*), dill (*Anethum graveolens*), saffron (*Colchicum*), celery (*Apium graveolens*), anise (*Pimpinella anisum*), balm (*Balsamum*), valerian (*Valeriana officinalis*), mint extract (*Menthe longifolia*) and organic honey were effective in alleviating primary dysmenorrhea.<sup>7</sup> Mirabia et al. reviewed 25 randomized controlled studies comparing pharmacological treatment with herbs and concluded that there was promising evidence for treatment of primary dysmenorrhea with herbs and that using herbal medicine could be an alternative for medical treatment.<sup>8</sup> Various herbs include fennel, cinnamon and rose.

### 2.1 Cinnamon

Cinnamon is more effective than placebo in relieving pain due to dysmenorrhea but is less effective than ibuprofen.<sup>9</sup> The advantage of Cinnamon is that it does not have side-effects like excessive bleeding, nausea and vomiting.<sup>10</sup>

### 2.2 Oral Ginger

Ginger rhizome has played an important role in Chinese and Indian medicine for over 2,500 years.<sup>11</sup> Oral ginger is potentially effective in treatment for pain in dysmenorrhea and is supported by available data. Overall, ginger was reported as more effective for pain relief than placebo, and no significant difference was found between ginger and NSAIDs. These findings, however, need to be interpreted with great caution due to the small number of studies, poor methodological quality and high heterogeneity across the trials based on the GRADE framework to assess cumulative evidence.<sup>12</sup> Trials have found that ginger is relatively safe but a few side effects have been reported like heartburn and headache infrequently and the numbers of adverse events were comparable for ginger and placebo groups.<sup>13,14</sup> In a systematic review Lakhani et al suggested that ginger has a superior safety profile to NSAIDs as pain treatment because of fewer gastrointestinal side effects and renal risks.<sup>15</sup>

### **2.3 Fennel**

Combination of fennel extract and vitamin E is effective in the reduction of pain and could be recommended to women not wanting to take medical preparations. <sup>16</sup> In a comparative study, 25 drops of fennel were given at six hour-intervals to one group and mefenamic acid 250 mg given to another. Fennel was found to be equally effective as NSAIDS. <sup>17</sup>

### **2.4 Rose**

Rose tea is traditionally consumed in Taiwan. Tseng et al. from Taiwan found that consuming rose tea for 3-6 months gradually reduces the severity of dysmenorrhea. <sup>18</sup>

## **3. YOGA**

Yoga practice can effectively alleviate menstrual pain and the symptoms associated with dysmenorrhea. Yoga intervention improves blood flow at the pelvic level as well as stimulates the release of B endorphins which act as nonspecific analgesics. <sup>19</sup> Yoga poses are a safe and simple treatment for primary dysmenorrhea and have no adverse effects. In a systemic review, Hyun et al suggested that caution is required while interpreting the effect of yoga due to a small number of small RCTs and limitation in their quality. Therefore, further high-quality RCTs are required to investigate the hypothesis that yoga alleviates pain and the symptoms associated with dysmenorrhea, to comprehend and confirm the effects of standardized yoga programs in dysmenorrhea. <sup>20</sup>

## **4. HEAT**

Heat is a common method for coping with dysmenorrhea and around 37–50% of women use heat to relieve pain during menses. <sup>21</sup> For women with dysmenorrhea, the application of local heat can reduce muscle tension and relax abdominal muscles to reduce pain caused by muscle spasms. Heat increases pelvic blood circulation to eliminate local blood and body fluid retention and diminishes congestion and swelling and reduces pain caused by nerve compression. <sup>22</sup>

Traditionally, superficial heat in the form of hot water bags, towels, or bottles has been used to ease menstrual pain. Superficial heat in the range of 40–45 °C is effective up to a depth of about 1 cm at the site of application. Deep heat, such as shortwave diathermy and microwave diathermy, reaches and treats deeper structures at depths of 2–5 cm. Deep heat also causes vascular and metabolic changes in deeper tissues and organs. <sup>23</sup>

In a systemic review, Junyoung Jo et al concluded that there was a clear benefit of heat therapy for menstrual pain in women with primary dysmenorrhea. Heat is associated with fewer adverse effects than conventional drugs but it is not clear that this translates into long-term clinical benefits. Despite these promising results, one should be cautious in interpreting because these results are based on relatively few trials with an unclear risk of selection bias. If safety and efficacy of heat therapy for the management of dysmenorrhea is proven in both the short- and long-term, it could become a first-line non-pharmacologic treatment to decrease menstrual pain in women with primary dysmenorrhea, particularly in those in whom NSAIDS are contraindicated. There is a need to compare the effects of various heating modalities with other general interventions in terms of short- and long-term outcomes as well as cost-effectiveness. <sup>24</sup>

## **5. PHYSIOTHERAPY**

Physiotherapy may be indicated to treat women with primary dysmenorrhea as it is a low cost and noninvasive alternative. There are several therapeutic forms such as thermotherapy, cryotherapy, kinesiotherapy, TENS and connective tissue massage, acupuncture and Pilates, among others. Results have been satisfactory in reviews of physiotherapeutic interventions, although the due methodological rigor is not always present, pointing to the need for further research in the area. <sup>25</sup>

## **6. CONCLUSION**

Dysmenorrhea is a very common gynecologic problem and affects 50-90% women and affects their quality of life in the reproductive years. Traditionally several medical therapies like NSAIDS and oral contraceptives have been used to relieve pain during menses. But medicines are not always effective, may be contraindicated in some and may cause adverse effects in others. So several non - medical contemporary therapies like herbs, heat, physiotherapy and yoga have been used for several years as the majority of them are comparable in efficacy with NSAIDS and are safe with few side effects. Further research is required in each field to establish their role in treating dysmenorrhea.

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