

# An alternative yogic approach for cyclical mastalgia—A narrative review

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## ABSTRACT

**Background:** Mastalgia or breast pain common benign breast disorder in women in her reproductive life. Mastalgia estimate prevalence 41–71%. It affects to overall quality of life and associated with anxiety, stress, and other psychological factors. **Objective:** The purpose of the study was to conduct a review of alternative therapy in the management of mastalgia. **Method:** A review was conducted using search terms cyclical mastalgia (CM), yoga therapy, breast treatment, primrose oil, oestrogen, progesterone and all the probable term in national and international data repositories such as PubMed, Scopus, science direct, google scholar, web of science in English language. **Result:** The review of alternative therapies in the management of CM suggests that most of the studies used primrose oil, vitamins, and physical activity. There are very few studies conducted in relation to yoga and cyclical mastalgia. Further, most of the studies explored effect of alternative therapies on psychological outcomes. None of the studies investigated efficacy of these therapies on hormonal changes. **Conclusion:** Evidence suggests that biochemical clinical trial is effective with side effect, primrose oil and seeds treatment is less effective. One evidence-based study with integrated yoga therapy should be considered in the management of cyclical mastalgia. More high-quality trial with yogic approach needed to first line management of patients presenting with CM.

**Keywords:** Anxiety, cyclical mastalgia, oestrogen, progesterone, stress, yoga therapy

## Introduction

Cyclical mastalgia (CM) is the common symptoms in women, which is experienced many times in their life. It is defined previously that breast pain is onset of Menstruation. It may be occurred unilaterally or bilaterally and usually associated with tenderness, heaviness, swelling, and estimate ranging of prevalence of this disorder is 41–79%.<sup>[1,2]</sup> Mastalgia is clinically classified into three types as per the Cardiff breast clinic, that is, (1) Cyclical mastalgia-by definition having breast pain prior the menstruation in luteal phase and it relieved within 7 days of the onset of menstruation; (2) Noncyclical mastalgia is not related with menstruation and it usually occurred in

unilaterally and described as a sharp burning pain that appears to be localized in the breast. It is common in 40–50 years of age in women (3) Extra-mammary pain/chest wall pain—musculoskeletal pain is always associated with unilateral of breast.<sup>[3-7]</sup> CM is generally nonthreatening but anxiety to undergo with breast cancer is approach to consultation and it's a benign breast disease.<sup>[8]</sup> Although mastalgia is common, the impact on everyday living should not be underestimated. Some investigator reported that 30% of premenstrual women suffered from CM lasting for more than 5 days a month, which was of sufficient severity to interfere with sexual, physical, social, and work-related activities.<sup>[9-11]</sup>

## Etiology

### Hormonal association

The etiology of CM is not well known. There are many factors to expose breast pain in women's reproductive

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lives.<sup>[12]</sup> Some studies have shown that increased oestrogen level and decreased progesterone level are associated with mastalgia.<sup>[9,10,13-15]</sup> It is evident from past studies that breast pain is associated with pregnancy, menopause, oral contraceptive pill, and HRT (hormonal replacement therapy).<sup>[16]</sup> Some studies have shown hyper activeness of prolactin stimulation by TRH (thyrotropin releasing hormone), however others suggested elevated level of lipid metabolism is contributing factor for breast pain.<sup>[17]</sup> Another study has shown that breast pain during the luteal phase of the menstrual period may be due to higher serum oestrogen to progesterone ratio.<sup>[18]</sup>

### Psychological association

In 1829, scholars studied the psychological association of breast pain throughout medical literature and wrote that women generally had an anxious and irritable disposition seeking guidance for breast pain.<sup>[19]</sup> Simultaneously some studies also identify the increased anxiety, depression is contributing factor for mastalgia.<sup>[20]</sup> Additionally, high distress levels were found in women with breast pain.<sup>[8]</sup> Another recent investigation reported that women with breast pain, past history of emotional abuse and benign breast lump shows increased anxiety, depression and somatization.<sup>[21-23]</sup> Studies suggested that various psychological factors are also responsible for Breast pain [Figure 1].

### Clinical Feature

During the luteal phase of the menstrual cycle, cyclic mastalgia usually begins and increases in intensity until menstruation begins, when it dissipates. Sometime pain persists lesser amount as a symptom of premenstrual. The pain usually presents upper outer breast area and radiates to the upper arm and axilla. Pain occurred bilateral or may be more severe in one breast. Patients often explained the pain as mild, moderate or severe.<sup>[24]</sup>

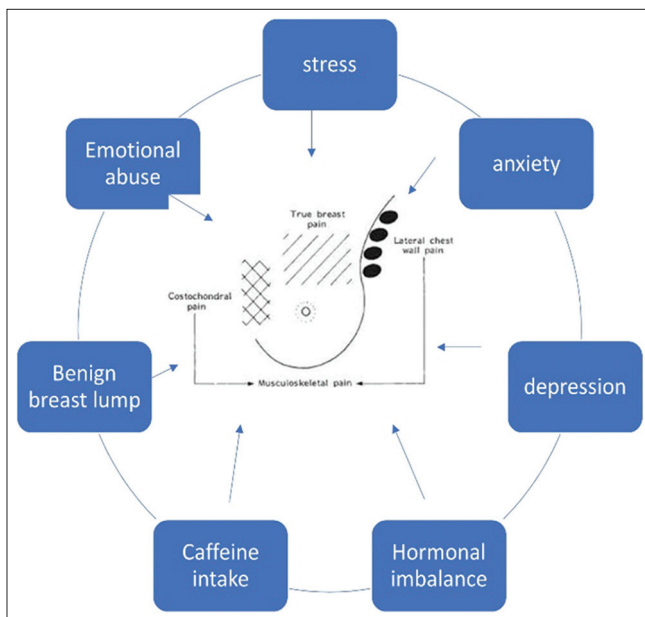


Figure 1: Causes for Increase Breast Pain

### Relationship to Other Premenstrual Symptoms and Breast Cancer

Cyclical breast pain, heaviness and tenderness are the part of premenstrual symptoms. Study found there is relationship between cyclical mastalgia and premenstrual syndrome. In severe CM, symptoms of luteal phase, water retention, negative effect and behavioral change, irritation, etc., were significantly higher than without breast symptoms.<sup>[25,26]</sup>

CM is not considered as symptom of breast cancer but its presence does not rule out the diagnosis of breast cancer. Preece *et al.* found that presence of breast cancer was unilateral and continuous for its differentiation from cyclic premenstrual mastalgia.<sup>[27]</sup> Fariselli *et al.* found that out of 200 patients only 5 patients were having local mastalgia.<sup>[28]</sup> Rare studies considered significant relationship to breast pain and breast cancer.

### Yoga Therapy as A Modern Medicine

Several alternative therapy [Table 1] has been conducted through using evening primrose oil,<sup>[24,29,30]</sup> vitamin E,<sup>[24,30]</sup> Insoflavones,<sup>[31]</sup> borage oil,<sup>[32]</sup> structured exercise,<sup>[33,34]</sup> flaxseed,<sup>[35]</sup> omega-3<sup>[35]</sup> and caffeine free diet<sup>[36]</sup> including side effects. yoga therapy would be zero side effect therapy. Yoga which is acknowledged to be an effective mind and body intervention for stress management, anxiety, and various mental and physical domain.<sup>[37,38]</sup> There is only one study done for the treatment of depression and quality of life in nurses with mastalgia wherein yoga therapy was introduced, however stress and anxiety were not assessed specifically in cyclical mastalgia.<sup>[39]</sup> Yoga is emerging as modern medicine and increasing popularity among common people. It is step by step path to improve individuals health and quality of life<sup>[40,41]</sup> [Table 2].

### Holistic Approach of Yoga Therapy and CM

Holistic approach of yoga therapy rejuvenates the entire system and synchronize balance in all five levels of one's existence. An ancient yogi emphasised the importance individuals' emotions and attempting to transform unhealthy thoughts pattern. Thoughts and emotions play an important role in mind (Manomaya kosha) in fact, it is a root cause of development of any psychosomatic disorder. The Panchakosha is the concept of five layer of human being described in ancient text Tetryoupnishad.<sup>[55]</sup> They are:

- (1) ANNAMAYA KOSHA- the physical level
- (2) PRANAMAYA KAOSHA- the subtle energy level
- (3) MANOMAYA KOSHA- the sheath of mind/emotion
- (4) VIGYANMAYA KOSHA- Intellectual mental level
- (5) ANANDAMAYA KOSHA- a state of optimal homeostasis and balance [Figure 2].

Maharshi Patanjali has described five cause of mental imbalance, which is stress producing factor called *Klesha's*. The five klesha are (1) Avidya (Ignorance) - understanding

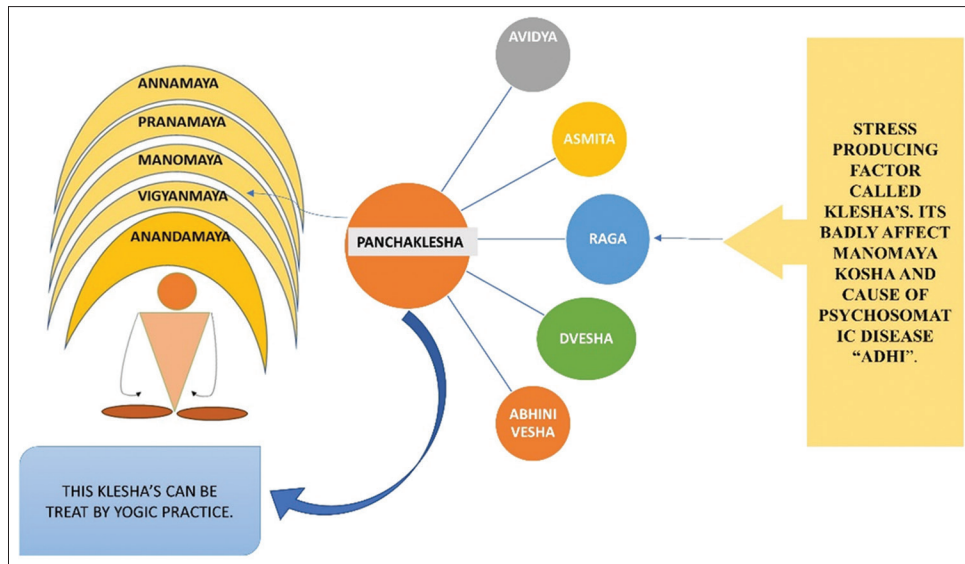


Figure 2: Concept of Panchakosha described in Taitriyopnishad

Table 1: Other alternative therapy for cyclical mastalgia

Citation detail	Sample and study design	Treatment	Result and conclusion
Sandhy Purthi <sup>[24]</sup>	-85 women with CM - a double blind randomized placebo-controlled trial	Evening primrose oil and vitamin E	Combine of Evening primrose oil and vitamin E dosage may decrease pain of CM.
Blommers J <sup>[29]</sup>	-120 women -randomized double-blind clinical trial	Primrose oil and fish oil with its control oil	Control oil offered benefits rather primrose oil and fish oil.
Alvandipor M <sup>[30]</sup>	-100 women -double blind clinical trial	6-month intervention evening primrose oil and vitamin E	Evening primrose oil and vitamin E have some therapeutic advantage.
D.M. Ingram <sup>[31]</sup>	-total 83 women -65 withdrawn then 16 remained -12 in treatment and 6 in placebo group.	2-month dosage of isoflavones (phytoestrogen)	Isoflavones is valuable tool but no previous study over it.
Romealdo <i>et al.</i> <sup>[32]</sup>	-91 subject with CM	900 mg borage oil capsule	Significant reduction.
AysunGenc <sup>[33]</sup>	-20 women -randomized control trial	6-week exercise conducted	Exercise treatment is beneficial for patients
Samruddhi <sup>[34]</sup>	29 females with CM -single group design	3 times per week for 4-week structured exercise	Structured exercise was effective in pain reduction
Farideh vazini <sup>[35]</sup>	-total 194 assigned women and divide 3 group 61, 60 and 60	Treatment with flaxseed, omega-3 and wheat bread respectively	Flaxseed bread diet was effective approach and a simple treatment with few complications.
Allen and Froberg <sup>[36]</sup>	Three armed RCT; single blind, n=56 with mastalgia. Experimental, caffeine-free diet; control, no dietary restriction; placebo, cholesterol-free diet	Caffeine-free diet	Decreased caffeine consumption did not result in a significant reduction of palpable breast nodules or in a lessening of breast pain/tenderness

impermanent impure painful and non-self as permanent pure pleasure and self. (2) Asmita (Egotism) - identification of purusha principle with prakriti principle. (3) Raag (Attachment) - attachment toward the thing which gives you pleasure. (4) Dvesha (Hatred) - aversion towards those things which are unpleasant or give you pain. (5) Abhinivesh- fear of death, clinging to life or willing to live.<sup>[56]</sup> Sage vashishta says progression of mind body

illness from mind to the body as vyadhi or disease through intermediation of prana [Figure 3].

### Cyclical Mastalgia as A Psychosomatic Disease (Mind-Body Disease)- A Rational View

Emotional state of woman is different from men. When

emotions persist for longer duration in mind it may lead to anxiety or depression. This constantly pressure disturb the prana (energy) in our body and then it became imbalance or unwarranted. Over a long period of time this excessive prana actively localizes in the breast as pain. Pain is uncontrolled activity in sensory nervous system which causes hormonal imbalances (oestrogen, progesterone, prolactin). Conclusion of this yogic concept of disease is combination of suppressed emotion's at the mind level or Manomaya kosha and its reflection as an inflammation that leads to imbalance endocrine profile and nervous system at physical sheath Annamaya kosha to show up CM.<sup>[4]</sup>

### Healing of The Cyclical Mastalgia Through Yogic Practice

Practice of asana following ideal diet, cleansing practice, and relaxation practice makes strengthen Annamaykosha. Asana is the major part of yoga therapy and it helps to improve vitality of every system. The repetitive stretching in each posture may result in reduction of pain in arm, neck, and thoracic region. Following satvik diet and zero caffeine intakes that help to keep calm under controlled. Cleansing (Shatkarma) is found to be effective in detoxifying systems of the body.<sup>[57]</sup> Alternative therapy as naturopathy, Ayurveda and acupressure follow basic principle of removing accumulated toxins which is the cause of blocked flow of prana. Cleansing technique clean the blockage of panic way and help to detoxifying.<sup>[58,59]</sup>

Pranayama is practice of pranamaya kosha, it is a voluntary process of slowing down the breathing in proper ratio with inhalation, exhalation and breath holding. Also known as purak, rechak and kumbhak respectively. Mentioned in hathapradipika "chalevatechalechittam." means when breathing became calm automatic mind became calm.<sup>[60]</sup> Various types of prana channelizing prana flow to different organ in general and to the breast area, in case of cyclical mastalgia.

Meditation is the major practice of Manomayakosha. Meditation (Dhyana) is the effortless flow of a single thought said by Maharshi Patanjali. Meditation practice deeply effect the brain and its interlinked system's. Meditation directly effect on cortex, the hypothalamus and the pituitary gland.<sup>[61,62]</sup> The hypothalamus activates parasympathetic system and through the

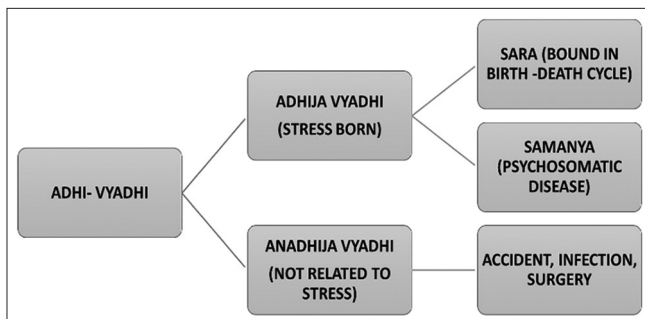


Figure 3: Concept of mind-body disease according to Yoga Vasishtha

pituitary gland affect endocrine system, beneficial biochemical changes occurred. it helps to reduce stress and improve mental health and well-being<sup>[63-66]</sup> [Figure 4].

Vigyanmaya kosha is intellectual sheath representing visheshgyan. This sheath is responsible for making decision. Swadhyay and Satsang is the one of the important practices of Vigyanmaya kosha.

Practice of Anandamaya kosha is selfless service, it leads to enhance Ananda and bliss. Total surrender to self or existence in bhaktiyoga leads to enhance this kosha.<sup>[55,67]</sup>

### Conclusion

The literature presented above indicates that CM is associated with mental illness, that is, stress, anxiety, depression, fear of breast cancer, irritation, etc., Several reports also indicate that these disorders are the foremost cause of CM around the world.<sup>[22,68,69]</sup>

CM is characterized by, in prior menstruation, extreme tenderness or discomfort in one, but most frequently both, breasts.<sup>[70]</sup> This disorder may be caused by various factors such as high levels of oestrogen, progesterone deficiency,<sup>[10]</sup> increased basal prolactin levels,<sup>[71]</sup> increased prolactin response,<sup>[9]</sup> possible role of gamma linoleic acid deficiency.<sup>[72]</sup> The disease management primarily includes pharmacological therapy which is effective however, for long term management several non-pharmacological therapies such as physical activity, breathing exercises and yoga practices are suggested. In fact, several studies have shown

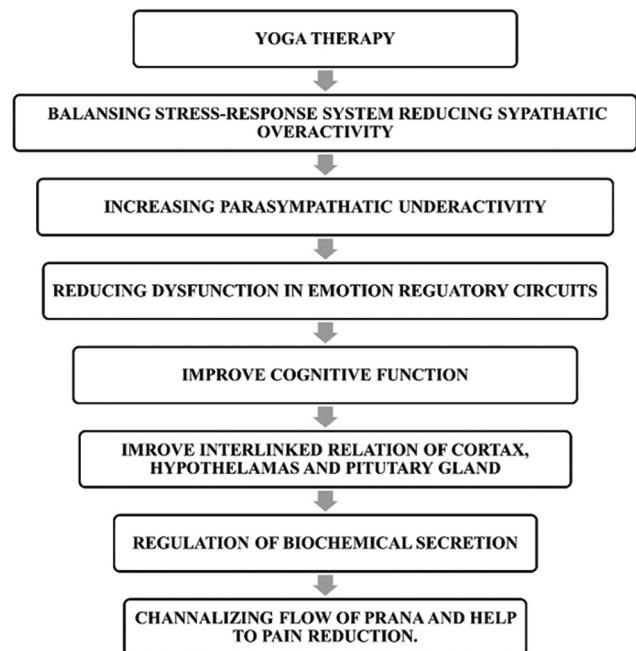


Figure 4: Psychophysiological rationale for the effects of yoga on anxiety and stress

**Table 2: Published study of yoga therapy for stress and anxiety**

Citation detail	Sample and study design	Treatment	Result and conclusion
Meena ramnathan <sup>[42]</sup>	40 elder women -randomized control trial	Yoga therapy -60 min twice a week for 12 weeks	Indicating decreased Level of depression and anxiety.
Jonkabat zinn <sup>[43]</sup>	22 participants	Mindful meditation weekly once for 3 months.	Meditation program can be effectively used for anxiety and phobia.
Khadijejananlpour <sup>[44]</sup>	30 multiple sclerosis women randomized control trial	Yoga therapy for 3 months.	Efficient method to improve the symptom of anxiety stress and depression in Mastalgia.
Masoumeh Shohani, Gholamreza Badfar <i>et al.</i> <sup>[45]</sup>	52 women with a mean age of 33.5±6.5	hatha yoga exercises and training sessions were held for 4 weeks (3 time/weeks; 60-70 min each) by a specialist	Yoga is effective in keeping away the stress, anxiety and depression.
Sushil Chandra <sup>[46]</sup> Rashmi shiju <sup>[47]</sup>	20 subject assignment double group design. 26 patients with diabetes single group design.	Sudarshan kriya yoga 30 days. 5 days Sudarshan kriya yoga.	Showing significant effect in stress reduction. Potentially beneficial to treating anxiety.
Michael de Manincor <sup>[48]</sup>	101 people participated in RCT study with symptoms of anxiety and depression disorder.	6- week yoga intervention.	Statistically significant difference between yoga and control group was observed.
Nasrin falsafi <sup>[49]</sup>	90 students recruited in study who had diagnosis of anxiety and/or depression -included stratified randomized controlled repeated measure with 3 group	8- week yoga or mindfulness.	Significantly symptoms decrease anxiety, depression and stress of interventional group.
virginia <sup>[50]</sup>	Single group study included 17 college students.	Six-week pilot program.	Significant effect of mindfulness practice on anxiety reduction and stress level.
Nicole <sup>[51]</sup>	Survey administrated on student and yoga teacher.	Yoga intervention.	Results showed a positive correlation with mindfulness and self-compassion and negative correlation with Depression, Anxiety and Stress scores with months of practice.
Vicki <sup>[52]</sup>	Study have included adolescents with cardiac diagnoses.	Mindfulness based stress reduction program	Improvement in level of anxiety and stress.
Rachel <sup>[53]</sup>	90 individual who have moderate to high stress	16 weeks yoga session.	After 8-16-week yoga practice showed significant improvement in anxiety.
Danial <sup>[54]</sup>	50 participants with depression assigned in RCT	Four-week laughter yoga program.	Statistically greater decrease in depression and improvement in mental health as compared with control group.
<b>PUBLISHED STUDY OF YOGA THERAPY FOR MASTALGIA</b>			
Sukannaraghunathan <sup>[39]</sup>	80 mastalgia nurse randomized control design	3 month and 6-month follow-up	Improve quality of life and depression

positive impact of yoga practices in the management of CM with psychological factor.<sup>[4,39,73]</sup> These results support the notion that comprehensive yoga protocol could be useful for managing CM disorders.

Research examining the effects of yogic kiryas, yoga postures, pranayama, and meditation amply suggest efficacy on reducing the pain. In mastalgia, psychological issues are more prevalent than the physical, in this context, yoga appears to be most appropriate technique to overcome psychological issues faced by women suffering from mastalgia. In fact, yoga is the mind body medicine and could be implemented as primary care to reduce psychological problems. Further, it is evident that psychological issues in mastalgia may lead to physical ailment [Figure 2]. Therefore, yoga can be used as an alternative therapy in mastalgia to achieve positive results. However, most of the studies conducted so far have not developed and validated a proper protocol. Nevertheless, results do demonstrate that mammary glands can be enhanced in healthy as well as

individuals with CM ailments.<sup>[39]</sup> Therefore, by shifting the focus to include structured yoga program for CM is warranted. Now it's necessary to conduct the research studies to validate the efficacy of integrated yoga therapies in patients suffering from cyclical mastalgia disorders. Although there are ample of studies indicating efficacy of yoga practices in improving biochemical and psychological parameter but there is need to develop a common protocol to prevent CM.

Key points of present review are management of Breast pain (Mastalgia) through Yoga Therapy, which helps to reduce menstrual irregularity and mental illness, that is, anxiety, stress, and quality of life. Primary yoga practice helps to overcome fear of breast cancer as most of the women feel breast pain every month. Yoga therapy has been found to establish harmonious relationship between mind and body. Thus, it will prevent developing psychosomatic and somatopsychic disorders.

Present review suggested that yoga practices may lead to reduce psychological issues in women suffering from mastalgia. Though, several studies indicate benefits of yoga however, there is need to conduct randomized controlled trials to address the beneficial effects of yoga in mastalgia.

### Ethical consideration

The study was approved by the Institutional Ethical Committee (IEC) of H.N.B Garhwal University (Ref. No./2019/04).

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Nil.

### Conflicts of interest

There are no conflicts of interest.

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