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Yoga for rehabilitation in chronic pancreatitis

This study was conducted to determine the effectiveness of yoga in management of pain in patients with chronic pancreatitis. Thirty patients with chronic pancreatitis who were experiencing difficulties with pain, anxiety, and weight loss underwent a 12 week yoga programme. Twenty four patients completed the programme and comparison of the pain, weight, diet, and pain medication before and after the yoga programme was done. Findings suggest that yoga is effective in decreasing self perceptions of pain and anxiety in this population and reducing their usage of pain medication. Patients also had significant improvement in their diet and gained weight. Limitations of the study and recommendations for future research and practice are discussed.

The pain that develops in chronic pancreatitis can be severe, chronic, often aggravated by meals, and may be present continuously, including at night. At our centre, we offer a comprehensive approach to pain from pancreatic disease with clinical evaluation by a pain management specialist, pancreatic surgeon, gastroenterologist, and a psychologist, as indicated. There is a lack of prospective controlled studies comparing various treatment regimens. Thus treatment options are partly dependent on the experience of the physician taking care of the patient.¹

Yoga was introduced as a tool for a rehabilitation programme and to supplement the other pain relief measures being taken by the patients. Yoga as a clinical intervention has been associated with a variety of physical and psychological health outcomes, such as improved mood and reduced symptoms of anxiety and depression.² The yoga programme was designed to complement the management of pain and anxiety based on a sequence of yoga poses by BKS Iyengar.^{3,4}

The yoga programme was implemented, directed, and evaluated by one of the authors (an experienced yoga instructor). Yoga sessions were planned three times a week over a 12 week period. Each session lasted approximately one hour. As participants entered the session, initial evaluation data were collected, including recording of each participant's pain levels, weight, average diet, and pain relief medication. Of 30 patients, 24 completed the full 12 week course.

Overall pre- and post-mean pain score was calculated according to the Von Korff pain score.⁵ The average pre-session pain score across all 36 sessions was 5.34. The average post-session pain score across all 16 sessions was 1.98. On average, a 62% reduction in self-reported pain levels occurred for clients who participated in the yoga programme.

Average weight before the start of the yoga programme was 42.4 kg, which increased gradually throughout the 12 week programme and the average weight after 12 weeks was 44.6 kg (that is, the average weight gained in 12 weeks was 5%).

Prior to the start of the yoga intervention, participants received, on average, 2.64 as needed (PRN) pain medications each day; receipt of PRN pain medication was lower for all participants during the yoga intervention. This pattern of decreasing use of PRN pain medication was consistent for all participants,

with data indicating that the average daily use of PRN pain medication decreased from 2.64 (0.36) to 1.68 (0.36). Paired Student's *t* test was used for statistical calculations. SEM was 0.36, with *n* = 24 and *p* < 0.001, which is highly significant. This represents a 36% reduction in participants' use of PRN pain medication during the yoga intervention.

Interviews were conducted with participants at the end of the 12 week yoga intervention to help determine its effectiveness. Each participant's thoughts regarding the yoga intervention were noted and all candidates claimed some benefit from the yoga programme. While each individual reported gains as a result of the yoga intervention, perhaps the best indicator of its effectiveness is found in the participants' requests to continue the programme.

Because yoga is multifaceted, physical exercise, breathing, relaxation, and meditation is integrated into one's being when it is practiced. Such integration has a strengthening effect on the whole self, and fortifies resistance to pain.⁶ Yoga helps individuals become more accepting of their body and less judgmental and reactive to pain.⁷ Additionally, as individuals practice various yoga poses, their attention is gently directed to other parts of the body at any given moment.⁸

The literature indicates that pain and anxiety are frequent and distressing co-occurring disorders in patients with chronic pancreatitis that significantly detract from their health and well being. Based on this review, yoga may be a beneficial intervention to explore for managing pain and anxiety in clients with chronic pancreatitis.

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Site distribution of gastrointestinal carcinoids differs between races

We read with great interest the guideline for gastroenteropancreatic neuroendocrine

(including carcinoid) tumours by Ramage *et al* (*Gut* 2005;**54**(suppl 4):iv1–16). In these excellent guidelines, they reported that the appendix is the most frequent site of gastrointestinal primary endocrine tumours (35% of the total number of tumours) while colon and rectal carcinoids comprise only 7% and 10%, respectively. One important aspect not mentioned however was the fact that site distribution of gastrointestinal carcinoids differs among races.

Modlin *et al* previously reported a marked predominance of carcinoids of the colon and appendix in the White Caucasian population based on nationwide surveillance in the USA.¹ In contrast, the incidence of rectal carcinoids was 3–4-fold higher in African-Americans than in White Caucasians. Accordingly, the site distribution of colorectal carcinoids markedly differs among these two races.

Regarding carcinoids in the Asian population, there have been few reports based on a large database. In order to provide such evidence, we analysed colorectal carcinoids in the Japanese population using "the Multi-Institutional Registry of Large Bowel Cancers in Japan", a nationwide database which covers approximately 10% of the Japanese population, from 1984 to 1998.² Among 90 057 cases of colorectal tumours registered during this period, 345 cases of colorectal carcinoids were identified. All cases were in the Asian population. Site distribution was: the ileum, three cases (0.9%); appendix, eight cases (2.3%); colon, 28 cases (8.2%); and rectum, 304 cases (88.6%). Thus carcinoids in the Japanese population exhibited a much higher distribution in the rectum than in the colon or appendix. This overrepresentation of rectal carcinoids is compatible with a previous report from Taiwan in which 33 (89.2%) of 37 colorectal carcinoids originated from the rectum.³

Differences in the distribution of colorectal carcinoids among races suggest that race related genetic factors play an important role in the development of gastrointestinal carcinoids. Hence racial disparity should be considered in the diagnosis of carcinoids, and further investigation using a larger database is needed to clarify these points.

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