

Original Research Article

Yoga as an adjunct therapy in elderly patients of chronic constipation

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ABSTRACT

Background: Constipation being very prevalent and common complaint in elderly people, an effective measure is needed to get the relief along with drugs for constipation used by clinicians. Our aim was to search out the potential applicability and effectiveness of yoga.

Methods: 30 elderly patients visiting medicine OPD for chronic constipation were included in study. Yoga group (15) was offered selected yogic practices in addition to drugs and control group drugs only. Patients kept record of drug intake on paper for 2 months of study. Data was obtained by using CAS score and frequency of drug intake. Data were analysed using t test.

Results: Baseline CAS scores for the yoga and control groups were 11.92 ± 1.59 and 12.07 ± 1.68 respectively. Post yoga CAS score for the yoga and control groups were 3.50 ± 1.40 and 4.14 ± 1.5 respectively. Frequency of drug intake in yoga and control groups in first month of yoga was 17.57 ± 2.31 and 19.14 ± 2.38 respectively. In 4th month of yoga practice frequency of drug intake in yoga and control groups was 11.07 ± 2.16 and 18.35 ± 2.56 , which was highly significant.

Conclusions: Selected yoga practices can be used as an adjuvant therapy to treat chronic constipation in case of elderly. They can be effective in decreasing drug requirement in patients of chronic constipation. Yoga practices should be advised for patients of chronic constipation.

Keywords: Chronic constipation, Elderly, Yoga, Yoga as therapy

INTRODUCTION

The obstacles of becoming older include practically all organs losing function in the senior population. Constipation is more common in older people than in younger people, yet it cannot be directly linked to ageing. Most people experience constipation in their later years for a variety of reasons, including decreased movement, drugs, underlying illnesses, and rectal sensory motor dysfunction. Chronic constipation affects quality of life significantly and affects 20% of the general population.¹⁻³

Constipation can be compared to other medical illnesses like different types of arthritis, chronic allergies

conditions, and diabetes as how it affects a healthy person's overall health, mental health, and social functioning.⁴⁻⁶

Constipation is characterised by irregular bowel movements, hard stools, considerable straining, prolonged time spent in the bathroom, the sensation that the bowels are not completely empty, and failed defecation.⁷⁻⁹ It's possible for various conditions to cause or contribute to constipation. Normal transit constipation, delayed transit constipation, and defecatory disease are the three subtypes of primary constipation. The typical type of constipation is functional constipation. Constipation occurs when stools pass through the colon at

their usual rate and with normal frequency, but the patient still complains of being uncomfortable. There could be bloating, discomfort, abdominal pain, and firm stools. Constipation with slow transit is more prevalent in young women. The intestinal motor action that propels food forward is severely impaired. Deficits in ejecting faeces from the rectum are most frequently the result of pelvic floor or anal sphincter dysfunction in defecation disorders.

Secondary constipation may be brought on by underlying organic conditions such as colorectal carcinoma, endocrine disorders, neurological conditions as Hirschsprung disease, medications like antihypertensive drugs, anorectal conditions as anal fissure, nutrition and inactive lifestyle.

Patients aged 50 years of age with alarming signs like weight loss, anaemia, faecal occult blood loss, familial history of colon cancer, secondary causes need to be ruled out. Constipation that started more than six months ago is considered chronic constipation.

Constipation can be treated with bulk laxatives like psyllium or osmotic laxatives. Stimulant laxatives like ibuprofen and stool softeners like liquid paraffin can also be used. Reassuring patient, advising more drinking water and diet high in fibre, with regular exercise are all effective first-line treatments for constipation.

Only when these other options fail, and then only for a brief time, are drugs administered. A stimulant or bulking agent is frequently more efficient and less expensive than substances like lactulose. Due to the imbalance in the vital life force caused by mental conflicts, the autonomic nervous system is disturbed and it might result in heightened bowel contractility. This leads to over digestion, non-digestion, wrong digestion and thus improperly digested food when settles in the body leads to diseases.

Constipation relief from exercise is well documented, but it can be difficult for senior people to maintain. The bottom line is the secret of creating powerful health is cleaning out the eliminative organs periodically and the best place to start with is the bowel. This is similar to the periodic overhauling that is imperative for the efficient functioning of a machine.

Our study primarily aimed to search out the potential applicability and effectiveness of yoga practices in chronic constipation which may help to boost up the natural physiology of body and decrease the overall need of pharmacotherapy.

METHODS

The present study was planned as quasi experimental study design. The study setting was at the J. N. Medical College, Sawangi Meghe Wardha during month of

February-May 2023. Patients in the age group of 56-70 years qualifying Rome's IV criterion of constipation were included in the study with proper consents.

Constipation of functionality

Diagnostic standards*

Two or more of the following must be present. A) Effort during more than a quarter (25%) of defecations. B) More than (25%) of defecations had lumpy or hard stools (Bristol stool form scale 1-2). C) The perception that more than 1/4 (25%) of defecations were not completely evacuated. D) Sensation of anorectal obstruction or obstruction blocking more than (25%) of feces. E) Using manual techniques to promote more than (25%) of feces (e.g., digital evacuation, support of the pelvic floor).

Criteria for inclusion

Age range of 56 to 70 years, BMI 19.7-26.9, constipation lasting longer than six months, good overall health condition, blood pressure of 140/90 mmHg or below.

Criteria for exclusion

Alarm signs such as taking any medication that can make you constipated, family history of peptic ulcer, colon cancer, myocardial infarction, diabetes mellitus, hemorrhoids herniated disc and spinal cord diseases. Previous yoga practice.

The purpose and methodology of the study were explained to all of the participants (N=30). The severity of constipation was then assessed using the McMillan and Broussard constipation evaluation scale (CAS).^{6,7} Selected yoga poses were made available to the N=15 yoga group like Moolbandha, Uddiyanabandha, Mahabandh, Pawanmuktasana, and Yoganidra.^{8,9} Daily in the morning one hour before breakfast particular asanas and bandh were practiced for 5 minutes each, followed by yoga Nidra for 10 minutes.

Both groups received instructions to use medications only when necessary and a piece of paper to track how frequently they used drugs. All participants underwent a second assessment after four months utilizing McMillan and Broussard constipation assessment scale.

The constipation assessment scale developed by McMillan and Broussard is reliable and popular. Each item on the scale for assessing constipation receives a grade of either no problem (zero), some trouble (one), or severe problem (two). Aside from abdominal bloating and distension, other symptoms include less frequent bowel movements, seeping liquid feces, rectal fullness or pressure, rectal pain during bowel movements, small stool volumes, and difficulty passing stools. The individual scores are added to produce the final score. The smallest score is zero, and the maximum is sixteen. Severe

constipation is related with a higher score on the constipation assessment scale.

Statistical analysis

Data on drug use frequency in the yoga and control groups as well as the mean and standard deviation of the McMillan and Broussard constipation evaluation scale were collected. Using SPSS V-20, data was compared before and after yogasanas. Using the t-test, data from both groups were compared, and a p value of 0.05 or below was deemed statistically significant. GraphPad Prism 6 was used to create the figures, while Microsoft Office 2010 was used to create the tables.

Ethical approval

Ethical approval has been taken from the Institutional Ethical committee. The reference number is DMIHER(DU)/IEC/2023/520 dated 03/02/2023.

RESULTS

Table 1 presents the pre and post yoga data of constipation assessment scale score in yoga group (n=15) and control group (n=15). Baseline CAS scores obtained for the yoga and control groups were 11.92 ± 1.59 and 12.07 ± 1.68 respectively. Unpaired t test analysis of two data was statistically insignificant (p value =0.708). Post yoga CAS score for the yoga and control groups were 3.50 ± 1.40 and 4.14 ± 1.51 respectively. The observed differences were not statistically significant (p value 0.863). Paired t test analysis of yoga group baseline and post yoga CAS score shows highly significant difference (p value <0.001).

Table 1: CAS score in yogic and control group.

Study groups	Constipation assessment scale score	
	Baseline data (Mean±SD)	After 4 months (Mean±SD)
Yogic activity group	11.92 ± 1.59	3.50 ± 1.40
Control group	12.07 ± 1.68	4.14 ± 1.5

Table 2 summarizes frequency of drug intake in yoga (n=15) and control (n=15) groups in first and fourth month of study. Frequency of drug intake in yoga and control group in first month of yoga was 17.57 ± 2.31 and 19.14 ± 2.38 respectively. Unpaired t test analysis of two data was statistically insignificant (p value =0.08). In 4th month of yoga practice, frequency of drug intake in yoga and control group was 11.07 ± 2.16 and 18.35 ± 2.56 respectively, the observed difference was highly significant (p value <0.001). Paired t test analysis of frequency of drug intake in yoga group showed highly significant difference (p value <0.001), while that of control group was insignificant (p value =0.431).

Table 2: Frequency of drug intake in yogic and control group

Groups	Frequency of drug intake	
	Baseline data (Mean±SD)	After 4 months (Mean±SD)
Yogic group	17.57 ± 2.31	11.07 ± 2.16
Control group	19.14 ± 2.38	18.35 ± 2.56



Figure 1: A small group of participants in yoga session.

DISCUSSION

Yoga has not been the subject of any of the several research examining the impact of various levels of exercise on constipation. There is some debate over whether exercise reduces constipation, although there are several research that support the idea.^{10,11} Blood is generally diverted away from the digestive tract during exercise and toward the working muscles and skin.¹² As a result of the relative decrease in oxygen delivery to the GIT caused by this blood shunting, the local tissue blood flow regulation system is activated.

Acute control and long-term control are the two phases in which the local tissue blood flow regulation mechanism operates. The blood flow to local tissues is thought to be acutely controlled by increased carbon dioxide, adenosine, adenosine phosphate complexes, histamine, potassium ions, and hydrogen ions, among other substances.

To meet the metabolic needs of the tissue, angiogenesis causes an increase in the vascularity of the tissue over time. The gut muscle will become stronger as a result of the increased blood flow and higher nutrients. Exercise affects the level of different gastrointestinal hormones that impact bowel movement and faeces in addition to the effects mentioned previously.^{13,14} Additionally, there is an increase in endorphin synthesis, which eases constipation.¹⁵ The pelvic floor muscles' actions affect the act of urinating. By strengthening the pelvic floor muscles, Moolbandha reduces constipation by affecting how one defecates. Uddiyanabandha and pawanmuktasana massage the viscera in the abdomen.¹⁶

Moolbandha and Uddiyanabandha are combined to form Mahabandh. In uddiyanabandha, pawanmuktasana, and mahabandh, the abdominal viscera are compressed, reducing gastrointestinal blood flow and causing the release of vasodilators.

By loosening the abdominal wall during these yoga poses, vasodilators will boost blood flow, resulting in greater nutrition and gastrointestinal tissue strengthening. Long-term yoga practise may lead to increased gastrointestinal tract vascularity and associated glandular activity to fulfil metabolic demand. The smooth muscles and pacemaker cells of the GIT may also be stimulated by the subsequent ischemia and increased blood flow. Similar to how exercise affects bowel movement and constipation, yoga practises may cause biochemical changes.

The effects of yoga Nidra may affect the brain-gut axis at the CNS level. Yoga practices offer the possibility of reducing inappropriate activation of the autonomic nervous system (ANS). Clinical trials on IBS patients have shown abnormalities in autonomic function and psychological profiles. Studies conducted around the world have proved that yoga is beneficial for constipation. Yoga helps to boost the digestive system and works efficiently for our gut. Our gut is the epicentre of our health. Yoga helps to regulate our bowel movements which have become a tough task for many of us given our millennial lifestyle. Yoga can benefit constipation problems in many ways by working on causative factors.¹⁷

This study has some limitation which includes small sample size. Duration of study was short, and population of central Maharashtra in particular area were included in study.

CONCLUSION

In senior people with chronic constipation, yoga is a safe and efficient technique to reduce the need for medication. All patients with chronic constipation who use medications often and have no alarming symptoms should be offered yoga. Drugs should be weaned off gradually while yoga exercises should be administered alongside pharmaceutical treatment. Yoga exercises that are as easy, cheap, and straightforward may help to lessen the burden of sickness on the healthcare system as well as the cost of therapy. Our elderly population's improved health and quality of life may be significantly impacted by yoga.

Recommendations

The research would benefit from an expanded sample size that encompasses individuals of diverse ages and genders, and it should be conducted over an extended period. Additionally, a more comprehensive analysis of biochemical markers is essential to provide quantitative insights into the impact of yoga practice on constipation.

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Conflict of interest: None declared

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