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Role Of Integrated Approach Of Yoga Therapy In The Management Of Osteoporosis

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Osteoporosis is a systemic skeletal disease characterized by low bone mass and micro architectural deterioration of bone tissue, with a consequent increase in bone fragility and susceptibility to fractures.

Aims

To assess the effectiveness of integrated approach of yoga therapy in the management of osteoporosis.

Methods and Materials

Total of 17 subjects, randomized to yoga (n=8) and exercise (n=9) groups. Subjects were volunteers. Yoga group was administered integrated approach of yoga therapy and light weight bearing exercises for the exercise group. Assessments were made at the 1 and the 21st day using Short Form 36 (SF-36) and self evaluation questionnaires (STAI) and a visual pain scale. The analysis was done using SPSS 10.0.

Results and Conclusion

Exercise group has shown a significant difference in physical functioning component of SF-36. Yoga group has shown a significant change in STAI Form 1 and 2, in SF-36 pain component and visual pain scale. Exercise has shown significant change in physical functioning and pain components of SF-36 and visual pain scale. The study hints that yoga can be a good tool to handle the anxiety levels which forms an important part of management of this particular disease.

INTRODUCTION

Osteoporosis is a disease characterized by low bone mass.[1] This loss of bone mass is caused because of several reasons including lifestyle and heredity. The exact disease burden is difficult to quantify, in developing countries there is a lack of data compared to the developed countries.[2] Currently 1.6 million hip fractures occur worldwide each year; which could go up to 4.5 million and 6.3 million 2050.[3, 4] Because osteoporosis causes bone degeneration which leads to loss of height over time and also back pain, hence, early on prevention is to be kept in mind as the treatment. This will also ensure that the older population will have independence, because only 30% recovers full functionality after a hip fracture.[5] This is yet another condition which can be majorly attributed to the lifestyle mess; excessive consumption of alcohol or smoking can increase the risk of osteoporotic hip fracture by folds (Kanis et al. 2005). Lifestyle change is the current talk to curtail or prevent the younger population to join this trend. It can be through exercise or

simple active daily life routine. Exercise not only has influence in the lifestyle but the bones themselves, there are enough studies published to substantiate this, especially weight bearing exercises are advised for controlling the disease and to build bone mass.[6]

Background

Osteoporosis is now considered as one of the major repercussions of bad life style, and there are many ways to address this problems, like medical interventions, lifestyle change programs which include exercise and proper dieting. As for preventing this disease, medical interventions are of little help. Aversion of this disease remains in how much the individual is active in his life and maintaining good health. Exercise has proved to be effective to maintain good amount of bone mass from early on. The individual has to pay attention when the peak bone mass is achieved, he has to take measures to protecting it from faster degeneration due to age. Over exercising has also been proved to have some negative effects especially to females. With this in mind, yoga as a management technique can help maintain the bone mass in the long run.[7]

Integrated Approach to Yoga Therapy (IAYT)

IAYT is a combination of physical postures (asanas), breathing practices (pranayama), meditation practices, and other techniques to relax the mind and body, this makes it a holistic approach to health. The aim of this study is to assess the role of an integrated approach to yoga therapy (IAYT) in the management of osteoporosis.

METHODOLOGY

Subjects:

18 patients (3 males and 15 females) age ranging between 45 – 75 with osteoporosis or osteopenia, selected from Ebnezar orthopaedic centre, were randomly allocated to yoga (n=8) and exercise (n=9) groups. They were selected by assessing their bone mineral density (BMD) to confirm either osteopenia or osteoporosis.

Design:

The yoga group performed simple joint mobilization movements and practiced physical postures (*asanas*) and ending the session with yogic breathing practices (*pranayama*) and relaxation.

Exercise group performed the same joint mobilization practice and the main practice comprised light weight bearing exercises combined with few active daily life practices like walking and climbing stairs and ended the practice with short seated relaxation. Relaxation was similar to both groups. The practice was for one hour a day.

Assessments:

The participants were assessed on the day 1 and 21, with Short Form 36,[8] Self evaluation quesionnare by C. D. Spielberger, R. L. Gorsuch and R. Lushene,[9] and visual pain scale. The SF-36 contains 36 questions aimed at the participants health under 8 major catagories – physical functioning, role limitations due to physical health, role limitations due to mental health, energy or fatigue, emotional well being, social functioning, pain and general health. The scores are then averaged accordingly under those headings. Self evaluation questionnaire or STAI, has 2 Forms, one looking at the participant's state and the other at the trait. It has a total of 40 questions, 20 under each Form.

RESULTS

There were a total of eleven parameters. In the comparison between the groups, exercise group has a significant difference in "physical functioning component of SF-36", yoga 51.56±17.67 and exercise 71.67±19.36 (Mann-Whitney Test, p=0.036) than yoga. There were no other significant differences between the groups. In the within groups analysis (Wilcoxon Signed Ranks Test), yoga had significant change in STAI Form 1 (37.88±8.61, p=0.018), STAI Form 2 (37.13±9.91, p=0.042). There also was a significant change in the Pain component of SF-36 (80.31±22.93, p=0.026) and visual pain scale (2.21±0.96, p=0.042).

While in the exercise group, there is a significant difference in physical functioning component of SF-36 (71.67±19.36, p=0.011), pain component of SF-36 (81.94±16.43, p=0.043) and visual pain scale (2.83±2.28, p=0.043).

DISCUSSION

The yoga group has shown significant changes in within groups comparison in SF-36 component pain, STAI, and visual pain scale. Whereas in exercise group, the changes are significant in SF-36 components namely – physical functioning, pain. There has also been a significant change in visual pain scale. Exercise has shown a significant difference from yoga in physical functioning component of SF-36.

Any disease has an influence on the patients' mindset, which can be commonly seen as anxiety or depression, in the case of osteoporosis, since fall prevention is highly important,[10] we can see patients can be very cautious in their movements and hence their overall daily life is restricted. The results suggest that this is an area that can be worked upon, yoga shows a significant reduction in the anxiety levels of the participants. Pain is another associated limiting factor that can slow down a person over time, both yoga and exercise have proved well in handling pain and thereby increasing their activity level.

CONCLUSION

This was an exploratory study that needs further research by application on large sample size to determine the effects of both the interventions, exercise has been proved effective in building bone mass in other studies, where other factors like pain and anxiety were not concentrated upon, but as yoga has shown a positive sign in handling anxiety and pain and hence needs to be applied for a longer term and for a larger population.

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