



RESEARCH ARTICLE

Approaches for integrating Ayurveda with Conventional System in a Multispeciality Hospital for Management of Osteoarthritis (Knee)

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ABSTRACT

Introduction: Udupa Committee Report 1958, Indian Health Policy 1983, National Population Policy 2000, ISM and H Policy 2002, and the National Rural Health Mission are some of the policy recommendations for mainstreaming of Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homoeopathy. Based on these recommendations, the physical mainstreaming for patient care and research is established but is not popularized in some hospitals and among health care providers due to various reasons.

Aim: To study the feasibility of integrating Ayurveda with allopathic system in the management of Osteoarthritis (OA) (knee).

Materials and methods: This operational study was conducted at Safdarjung Hospital, New Delhi, India, in collaboration with the World Health Organization, India office. The study covered 252 patients of OA knee, out of which 201 completed the study. For the management of OA, standardized Yogaraja Guggulu, Ashwagandha, and Narayan taila were used along with lifestyle and dietary recommendations.

Results: Among 201 patients who completed the study period of 8 weeks, there was statistically significant improvement in signs and symptoms, King George's Medical College (KGMC) and Visual Analog Scale (VAS) scores (p -value < 0.05). There was statistically significant reduction in the intake of rescue medicines and side effects of oral nonsteroidal anti-inflammatory drug. The study could develop referrals from orthopedics department to Ayurvedic unit for management of OA knee.

Conclusion: It was evident from the study that the Ayurvedic treatment is effective in the management of OA. It also concluded that continued communication and scientific approaches will ascertain actual integration and there is good scope for developing integration model in the management of OA. The

Ayurveda health care providers were able to establish functional integration with their allopathic counterparts and were able to manage cross referrals.

Keywords: Ayurveda, Homoeopathy, Integration, KGMC Scale, Osteoarthritis, Safdarjung, World Health Organization, VAS.

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INTRODUCTION

The role of traditional, alternative, and complementary systems of medicines is becoming important after it was addressed by the World Health Organization (WHO) at Alma Ata in 1978.¹ Many allopathic doctors are also accepting the merit of the traditional systems, both in India and in other countries. They also acknowledge the importance of diet, lifestyle, social, and psychological factors. The trend is leading to integrated medicine harnessing the best from all systems and prescribing the therapy with available options to serve the patient best.

Medical pluralism, the use of multiple forms of health care is widespread. Consumers practice integrated health care irrespective of whether integration is officially present or not. Almost 20 years ago the WHO estimated that in many countries, 80% or more of the population living in rural areas are cared for by traditional practitioners and birth attendants.² But the challenge of integrated health care is to generate evidence on which illnesses are best treated through which approach. Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homoeopathy (AYUSH) are officially recognized, widely accepted and practiced parallel to allopathic system of medicine in India. In view of their potentials, the impetus is given to the mainstreaming and integration of these traditional systems.

Due to policy initiatives, India has achieved physical integration in terms of collocation of AYUSH units in different levels of health care delivery setup. However,

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for successful mainstreaming the operational integration in terms of communication, information sharing, cross referrals between conventional and AYUSH systems are very important. There is an urgent need to harmonize the approaches to successfully achieve functional integration. National Rural Health Mission interim analysis has also stated that mainstreaming should not only be seen as a process of appointing an AYUSH practitioner and providing AYUSH medicines through the dispensary.³

This study was conducted in an Ayurvedic unit of Safdarjung Hospital, New Delhi, which is a multispecialty conventional medical hospital under central government in Delhi. Osteoarthritis (OA) is a condition for which maximum number of patients come for Ayurvedic management after trying conventional medicine. Ayurveda has much strength in the management of this problem through use of traditional medicines, lifestyle modifications, and dietary recommendations. By considering limitations of allopathy in the treatment of OA mainly due to side effects of long-term medication⁴⁻¹⁰ and description in Ayurveda,¹¹⁻¹⁷ this condition was chosen as a model to study the feasibility of integration of both the systems. In this project, to maintain uniformity, the medicines that are recommended in Ayurvedic texts^{18,19} which have long history of clinical use for OA by Ayurvedic practitioners were selected. These medicines also had preliminary evidence of their safety and effectiveness.²⁰⁻³⁷

AIMS AND OBJECTIVES

The aim of the project was to study the feasibility of integration of Ayurveda with allopathic system in the management of OA (knee).

Specific Objectives

- To orient the practitioners of allopathic system about the needs of integration and the role they have for the benefit of the patients.
- To develop a cross-referral system between Ayurveda and the Dept. of Orthopedics for suitable patients with OA knee.
- Facilitating the utilization of Ayurvedic system by suitable patients of OA knee showing willingness for it.

MATERIALS AND METHODS

During the first phase, the pretesting of information generation tools, sensitization of practitioners, information education and communication for patients were done and standardized medicines were procured. The intervention phase included registration, treatment, and follow-up of the patients.

Selection of Sample Size for the Study

A sample size of 200 patients was required to determine the success rate of about 70% with 95% confidence level. Expecting a dropout of about 15%, 230 patients were considered to be sufficient for the study. The patients who were willing and referred by the Department of Orthopedics of Safdarjung Hospital were enrolled in the study after screening and obtaining informed consent. The detailed history and findings of the examination including radiological findings of affected knee joint was entered in the case report form. The selection was made according to predefined inclusion criteria.

Study Intervention

The following are the management approaches used in the study:

- Tablet Yogaraj Guggulu, 1 to 2 tablets of 125 mg twice or thrice daily to be taken after food.
- Ashwagandha Churna 3 gm twice daily to be taken after food preferably with milk.
- Narayan taila for local massage and hot water fomentation.
- *Diet and lifestyle*: General Ayurvedic diet and lifestyle recommendations were advised to the patients.
- Rescue medicine – Patients were allowed to take oral nonsteroidal antiinflammatory drug (NSAID) (diclofenac sodium 50 mg) as per the advice by allopathic doctor whenever necessary, which was recorded by the patients in the card provided to him/her. At each follow-up it was entered in the case record form to know whether there is any change in the dosage of NSAID.

Duration of the treatment – 8 weeks for each case.

Follow-up – Fortnightly follow-up was done to ensure the proper compliance of the medicine and lifestyle and also to monitor the status of health.

Study Indicators

- Proportion of the patients who opted for the enrollment for Ayurvedic treatment.
- Proportion of patients who benefited [assessment of modified King George's Medical College (KGMC) score^{38,39} (revised Western Ontario and McMaster Universities Osteoarthritis Index), Visual Analog Scale (VAS),⁴⁰ reduction in the intake of rescue medicine, side effects of pain killers].

Process Indicators

- Proportion of doctors with positive attitude toward the integration
- Overall satisfaction of the patients

Statistical Analysis

The data were reported as n (%) for the descriptive parameters and as mean (standard deviation [SD]) for KGMC and VAS scores. The KGMC and VAS scores were compared by using paired t-test before and after the treatment. All the descriptive parameters were compared using two-sample proportion test. Statistical Package for the Social Sciences was used for all the data analysis. A p-value of <0.05 was considered as significant.

Study Participants

Out of 264 referred cases from Department of Orthopedics, 252 patients were registered as per selection criteria designed in the study. Twelve patients who did not meet the selection criteria were excluded from the study. Out of 252 enrollments, 201 patients completed the treatment period of 8 weeks and 51 patients had dropped out from the study. The contacts of all the patients including their telephone numbers were maintained and they were regularly reminded about the follow-up. If the patient is unable to come for follow-up even after 1 week of schedule, and misses the medication for more than 1 week, they were considered as dropouts. In addition to this, if the patient wished to withdraw from the study for any reason they were allowed to do so. Flow Chart 1 shows the outflow of the patients in the study and reason for dropouts.

RESULTS

It was observed from the data that the females outnumbered males in seeking the treatment for OA knee. The mean age of the sample in the project was 53 with SD of 12.77. Mean body mass index (BMI) was found to be 26.14. The mean duration of illness among enrolled patients was 3 years and the patients were taking allopathic treatment

for it since an average duration of 1.4 years. The severity grading was done as per the Kellgren–Lawrence scale for OA knee. The maximum number of patients, i.e., 48.6%, had moderate grade of OA in the joints; 42.9% of the patients were in mild category and 8.5% belonged to severe grade. Ayurveda has a unique procedure of identifying each person based on psychosomatic composition. In this project, the *Prakriti* of the patients was assessed by using a questionnaire and software developed by the Central Council for Research in Ayurvedic Sciences (CCRAS). Maximum population who were suffering from OA knee belonged to *Pitta kaphaja Prakriti* followed by *Vata pittaja*. Table 1 shows the general profile of the patients suffering from OA knee.

The severity of the disease was assessed by KGMC and VAS scores. To assess the modified KGMC score, the patients were asked to describe the difficulty in performing 13 common physical activities as 0 – Absent, 1 – Mild, 2 – Moderate, 3 – Severe, and 4 – Prohibitive. To make the presentation more understandable, mild and moderate, severe and prohibitive were combined. The grading was noted at baseline and three consecutive fortnightly follow-ups. A common trend of improvement was observed in performing all 13 functions selected for the assessment of results. Results of all the functional criteria were statistically significant (p-value < 0.001). The baseline mean score of modified KGMC in the patients was 35.17 and at each visit it gradually declined to reach 21.97 at the end of 4 weeks (Graph 1).

Another parameter used for the assessment of effect of Ayurvedic management was VAS score. The patient was asked to place a mark on the VAS that consisted of 11 markings ranging from 0 (no pain) to 10 (maximum pain) on a linear line. The point marked by the patient

Flow Chart 1: Outflow of the patients in the study

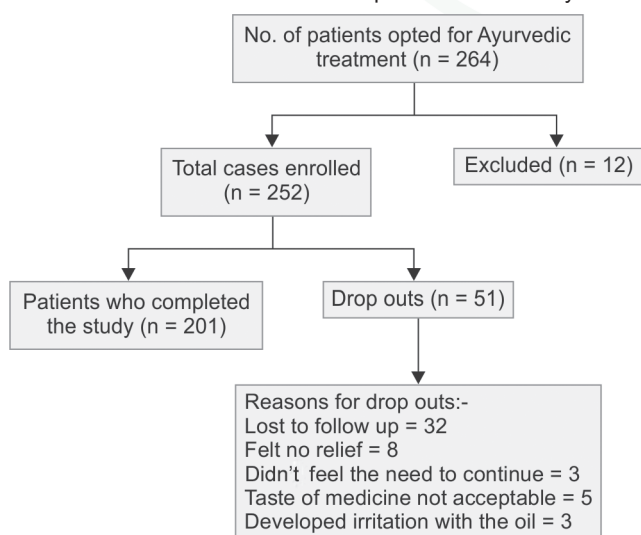
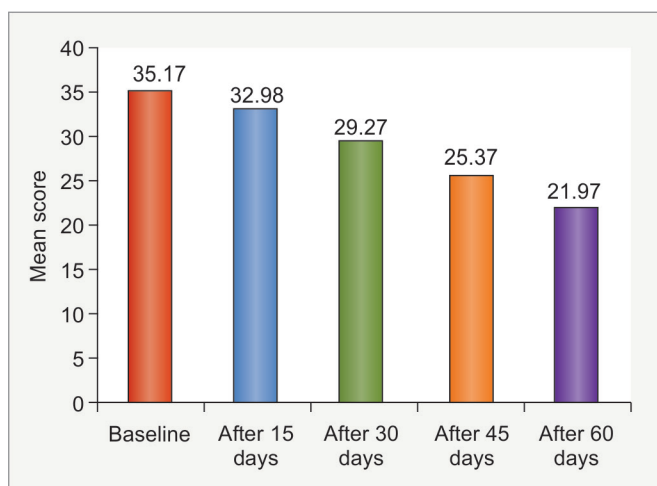
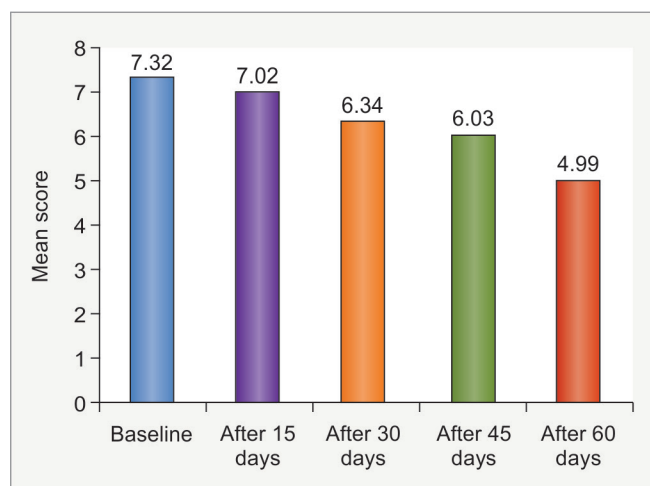


Table 1: General profile of the patients (n = 252)

Variables	n (%)	Mean (SD)
Sex		
Male	90 (35.8)	
Female	162 (64.2)	
BMI		53 (12.77)
Age (years)		26.14
Kaphaja	4 (1.5)	
Vata–Kaphaja	34 (13.4)	
Vata–Pittaja	94 (37.3)	
Pitta–Kaphaja	119 (47.3)	
Sannipataja	1 (0.5)	
Duration of OA knee (years)		3
Taking allopathic treatment (duration in years)		1.4
Grading of osteoarthritis – Kellgren–Lawrence Radiological Scale		
Mild	108 (42.9)	
Moderate	122 (48.6)	
Severe	21 (8.5)	



Graph 1: Effect of treatment on KGMC score at the end of 4 weeks



Graph 2: Effect on KGMC score at the end of treatment

was noted and at baseline the mean scale was 7.32 and at the end of the treatment it reduced to 4.99 (Graph 2). The improvement was statistically significant with p -value <0.001 .

It was further noticed that at the initiation of Ayurvedic treatment, all the patients who were enrolled used to take oral NSAID (Diclofenac sodium 50 mg) with the dose ranging from thrice a day to once in a week. There was considerable reduction in the intake of painkillers after starting Ayurvedic treatment. At the end of the study, 73% of the patients stopped taking NSAID. Owing to the reduction of intake of NSAID, there was significant reduction in the side effect caused by NSAID. The frequency of flaring up of symptoms of OA also decreased after the use of Ayurvedic medicines (Table 2).

Moreover, the information on the outlook of the doctors about integration and the particular study at department of orthopedics was obtained by using a questionnaire. Before initiation of the project, none of the doctors were referring any patient to Ayurvedic unit, which was the reason for initiating the study. Later

a sensitization workshop was held at the beginning of the project, at the outcome of which the Ayurvedic unit started getting referrals from the allopathic doctors, which rose to 50% out of total attendance at the middle of the study from 0% at the beginning. Further, toward the end of the enrollment, the Ayurvedic unit started getting nearly 70% referral cases of OA from allopathic doctors. Out of 30 orthopedicians, all of them have attended at least one of the sensitization, midterm, and dissemination meetings; 70% of them felt that the project was useful at the end of the project against none at the baseline. There was considerable shift in their attitude toward the project (Table 3).

The posttreatment perception of the patients was recorded by using a questionnaire; 63% of 201 patients had significant benefit, 34.2% expressed little benefit, and 2% of the patients did not report any benefit from Ayurvedic treatment for OA knee (Table 3). When they followed Ayurvedic diet restrictions, 57.1% of the patients experienced benefit and 71.1% felt relief with the quadriceps strengthening exercises advised by the doctors.

Table 2: Percentage of the patients showing reduction in the intake of rescue medicine (NSAID), suffering from side effects and exacerbations of symptoms (n = 201)

Parameters	Baseline (%)	15 days (%)	30 days (%)	45 days (%)	60 days (%)
Use of rescue medicines					
Continues to take as before	–	17.3	7.0	3.5	1.0
Reduced the dose	–	41.1	36.7	27.8	24.6
Did not take any painkiller	–	40.6	53.3	68.2	73.9
Increased the dose	–	1.0	3.0	0.5	0.5
Percentage of patients with side effects like hyperacidity, flatulence, heat, stomatitis, loss of appetite	79.6	66.6	56.2	43.2	28.8
Exacerbations of symptoms					
Never	0.5	–	–	–	34.0
Once	4.0	–	–	–	26.0
Twice	14.0	–	–	–	30.5
3–5 times	29.0	–	–	–	9.0
6 or more times	52.5	–	–	–	0.5

Table 3: Percentage of patients referred by allopathic doctors, shift in doctor's perception about the treatment, and opinion of the patients about the role of exercise and diet

	<i>Before the initiation of project (%)</i>	<i>At the end of the project (%)</i>
<i>Referrals made (n = 30)</i>	0	70
Perception of allopathic doctors about the usefulness of the project (n = 30)		
Project is useful	0	70
May be useful	80	20
May not be useful	0	0
Don't know	20	10
Perception of the patients about Ayurvedic treatment (n = 201)		
Significant benefit	–	63.3
Little benefit	–	34.2
No benefit	–	2.0
Opinion of the patients about the role of diet and exercise in the management of osteoarthritis knee (n = 201)		
Diet restriction helped in knee problem	–	57.1
Exercise helped in knee problem	–	71.7

DISCUSSION

Self-referrals

The project could make aware of the patients attending hospital about the availability of Ayurvedic treatment for OA. This was evident in 180 patients who turned up for Ayurvedic treatment on their own volition without referral from the orthopedics department.

PROCESS INDICATORS

Perception of Doctors toward the Integration

Overall perception of the doctors of both Ayurveda and allopathy was found to be very good. The perception of the doctors of the hospital gauged with the help of a self-administered questionnaire and based on the referrals made and their attendance in the meetings. A considerable shift in their attitude toward the project was seen. In the case of allopathic doctors, this could be attributed to the sensitization workshops and repeated dialogues.

Overall Satisfaction of the Patients

The pre- and postassessment of feeling of general well-being of the patients was also recorded. The results show 88% of the patients who were never aware of availability of Ayurvedic services at the hospital became aware and 70% of the enrolled patients recommended Ayurvedic treatment to other patients.

Tolerability and Safety

It was well tolerated by the majority of the patients. Only four (1.9%) female patients had skin irritation like itching and mild redness with use of oil, because of which 3 patients dropped out and the other patient continued

to use oil because the problem settled down later. Four (1.9%) patients had nauseating feeling with the taste of *Ashwagandha* powder, who were also withdrawn from the study. Five (2%) patients felt slight uneasiness. No other side effect was reported by any patient.

CONCLUSION

To conclude, the study could initiate functional linkages between Ayurvedic and Orthopedics Departments in terms of continued communication and referrals of the suitable patients. Frequent meetings developed a healthy collaborative working atmosphere between both the units at the hospital. The study created awareness among practitioners of Department of Orthopedics about the benefits of Ayurvedic treatment for OA. Ayurvedic treatment was proved to be effective in the management of OA knee with respect to reducing the symptoms, improving the quality of daily activities, and reducing the use of NSAID as rescue medication. The study could create awareness among the patients visiting the hospital about the availability of Ayurvedic services in the premises. It is apparent from the experience with the study that the continued communication and scientific approaches will usher actual integration and a rational cross-referral system is the practical effective way to integrate Ayurveda with allopathy. In a nutshell, the study improved communication among Ayurveda and allopathic system health care providers. It was successful in creating awareness on the potential strength of Ayurvedic system among allopathic doctors. The study established functional integration and Ayurvedic unit was able to get referral patients from allopathic doctors during the study. The study further improved the quality of life of the patients suffering from OA knee. Large-scale multicenter studies

will further validate this approach and also Ayurvedic treatment in the management of OA knee.

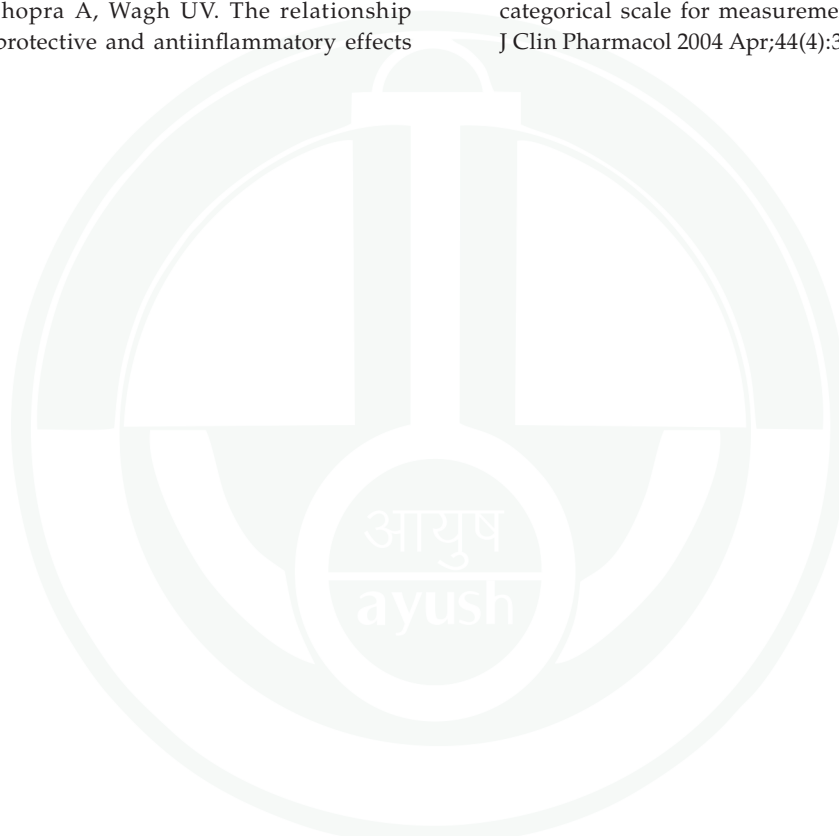
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सारांश

संधिवात (जानु) के प्रबंधन के लिए एक मल्टीस्पेशल अस्पताल में आधुनिक चिकित्सा प्रणाली के साथ आयुर्वेद के एकीकरण का उपागम

¹सुलोचना भट्ट, ²विकास गुप्ता, ³एन श्रीकांत, ⁴एम एम पाटी, ⁵राकेश राणा,
⁶रेनु सिंह, ⁶ऋचा सिंघल, ⁷करतार सिंह धीमान

पृष्ठभूमि: उडुप्पा कमेटी रिपोर्ट 1958, भारतीय स्वास्थ्य योजना 1983, राष्ट्रीय जनसंख्या योजना 2000, भारतीय चिकित्सा पद्धति एवं होम्योपैथी योजना 2000 और राष्ट्रीय ग्रामीण स्वास्थ्य मिशन आदि कुछ ऐसी योजनाएँ हैं जिन्होंने आयुष (आयुर्वेद, योग व प्राकृतिक चिकित्सा, यूनानी, सिद्ध एवं होम्योपैथी) को मुख्यधारा में लाने की सिफारिश की है। इन सिफारिशों के आधार पर कुछ अस्पतालों में भौतिक तौर पर आयुष चिकित्सा पद्धति को मरीजों के उपचार एवं अनुसंधान के लिए मुख्यधारा में लाया जा चुका है, परन्तु कुछ कारणों की वजह से यह पद्धति अन्य अस्पतालों में एवं अन्य स्वास्थ्य सेवा प्रदायकों के बीच अधिक लोकप्रिय नहीं हो पाई है।

उद्देश्य: यह अध्ययन जानु संधिवात के प्रबंधन के लिए आयुर्वेद एवं आधुनिक चिकित्सा पद्धति के एकीकरण की संभावना का अध्ययन करने के लिए किया गया था।

साधन एवं विधि: यह अध्ययन सफदरजंग अस्पताल में विश्व स्वास्थ्य संगठन के सहयोग से किया गया। इस अध्ययन में संधिवात के 252 मरीज पंजीकृत किए गए जिनमें से 201 ने अध्ययन पूर्ण किया। इस रोग के प्रबंधन हेतु योगराज गुग्गुलु, अश्वगंधा चूर्ण और नारायण तेल के साथ-साथ जीवन शैली में बदलाव हेतु सुझाव भी दिए गए।

परिणाम: 201 रोगियों ने 8 सप्ताह का अध्ययन काल पूर्ण किया जिसके दौरान केजीएमसी तथा वीएएस स्कोर और लक्षणों में सांख्यिकीय तौर पर सुधार पाया गया। दर्द निवारक औषधि की कम आवश्यकता प्रतीत हुई। इस अध्ययन में सफदरजंग अस्पताल के हड्डी रोग विभाग से संधिवात रोगियों को आयुर्वेदिक उपचार हेतु भेजा गया।

निष्कर्ष: इस अध्ययन से यह ज्ञात होता है कि आयुर्वेदिक उपचार संधिवात के रोगियों में प्रभावी है। लगातार संवाद एवं वैज्ञानिक पहुंच के द्वारा ही आयुर्वेद एवं आधुनिक चिकित्सा पद्धति का एकीकरण किया जा सकता है। संधिवात के क्षेत्र में भी इनके एकीकरण की उचित संभावना है।

आयुष
ayush