A Research Paper on “Effect of Yogic Package on Rheumatoid Arthritis”

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Abstract

This study was aimed at studying the effect of yoga package (YP) with some selected asanas, Pranayama, Cleansing Practices, and Meditation on pain intensity, Inflammation, Stiffness, Pulse Rate(PR), Blood Pressure(BP), Lymphocyte Count(LC), C-reactive protein(CRP), and Uric Acid(UA) level among subjects of Rheumatoid Arthritis (RA). Two Randomized Group Design was employed for pre and post observation that related to Experimental Group (EG) and Control Group (CG). Pain intensity, number of inflamed joints, time of morning stiffness, PR, B, LC, CRP and UA level were quantified by Simple Descriptive Pain Intensity Scale (SDPIS), counting, interview, palpating radial artery, Sphgmomanometer, Monocular and Binocular microscope, RA-50 chemistry analyzer respectively. After hypotheses testing, result met revealed significant positive association between pain intensity and YP ($X^2=34.64 > X^2_{0.005, 78}$). Similarly, a statistically significant reduction in mean time of stiffness ($t= 10.12 > t_{0.005, 78}$), PR ($t = 4.39 > t_{0.005, 78}$) and UA ($t= 2.41 > t_{0.005, 78}$) towards normalcy was met whereas statistically insignificant reduction was met for number of inflamed joints ($t= 1.55 < t_{0.1, 78}$) and CRP ($t= 0.197 < t_{0.1, 78}$). Thus, it was concluded that YP is a significant means to reduce intensity of RA as a complementary therapy. Most probably, a sufficient means for complete cure of RA if practiced for ever with other yogic disciplines.

1. Introduction

In present scenario Rheumatoid Arthritis (RA) is more prevalent among masses. Average disability levels in patient with RA have declined by 4% since 1977 at the rate of 2% per year by newer treatment strategies (Krishnan Eswar, 2003). There are around seven million (7million) patients suffering from RA in India, women being more affected than men. The exact causes of disease remain unknown and as yet there is no cure to it (The economic times, 21 Nov. 2006). Modern medicine has not yet fully come to terms with the overall dimension of arthritis. It concentrates on the relief of arthritic pain, but fails to treat and correct its underlying causes. A wide spectrum of drugs is prescribed, beginning with aspirin derivatives, which act both as analgesics and anti-inflammatory agents. Yogic practices help to reduce stress, muscle tension thereby boosting immune system (The Times of India, 12 Oct. 2006). However, yoga will never advocate drug management of symptoms is isolation, while neglecting to correct the underlying deficiencies of diet, exercise, and lifestyle and so on (Karmananda, 2003). Increasingly, RA patients are turning to alternative therapies like meditation to ease the toll of their disease. For doctors wishing to offer patients a complement to medical management, mindful meditation may offer hope for improving psychological distress and strengthening well-being in patients with RA (Pradhan et al., 2007). Practice of yoga...
showed significant improvement in grip strength of experimental group than controls because of intervention for 12 weeks without any adverse effects (Haslock et al., 1994). Yoga practice improves hand grip strength of RA patients and magnitude of improvement varies with factors like age and gender (Das and Telles, 2001). The study showed that yoga group was able to return to their normal active life style much earlier than controls. Subjects of yoga group reported more functional efficiency as compared to controls is going about their daily domestic chores. Subjects in intervention were more independent in offending to their daily activities and depended less on their security of distress symptoms such as pain, stiffness, swelling and immobility etc. This reflected in their overall improvement in functional quality of life in intervention group (Chandrashekara, 2004). After going through aforesaid and other related literatures, it is found that there is no complete cure of RA in allopath and complementary therapies like diet cure, naturopathy, and indigenous medicine so on have been found effective to uproot epidemic attack of RA among world masses. After getting this clue, it was supposed relevant to investigate the effect of Yoga Package with yogic discipline on RA patients. Hence, the selected topic has been entitled “To study the effect of Yoga Package (YP) on Joints’ pain intensity, Inflammation, Early morning stiffness; Pulse Rate, Blood Pressure (Systolic and Diastolic), Lymphocyte count, C-Reactive Protein and Uric Acid of RA patients with age (23-48)yrs”. This research has aimed to study the effect of yoga package (YP) on Pain intensity, Number of inflamed joints, Time of early morning stiffness on joint movement, Pulse rate(PR), Systolic blood pressure(SBP), Diastolic blood pressure(DBP), Lymphocyte count(LC), C- reactive protein (CRP) level, and Serum Uric Acid (UA) level of RA patients. If the result met will favor the efficacy of yoga to heal RA, then it will be a great solution to all sufferers of RA.

**Hypotheses:** During the course of this study, the following null hypotheses with non-directional alternative hypotheses have been set:

1. There is insignificant association between post pain intensity and Yoga Package.
2. There is insignificant difference in post mean number of inflamed joints between EG and CG.
3. There is insignificant difference in post mean time stiffness between EG and CG.
4. There is insignificant difference in post mean pulse rate between EG and CG.
5. There is insignificant difference in post mean systolic blood pressure between EG and CG.
6. There is insignificant difference in post mean diastolic blood pressure between EG and CG.
7. There is insignificant difference in post mean lymphocyte count between EG and CG.
8. There is insignificant difference in post mean CRP level between EG and CG.
9. There is insignificant difference in post mean serum uric acid level between EG and CG.

**2. Method**

**2.1 Research Design:**
randomized control group design

**2.2 Sampling Process:**
Eighty subjects with age range 23-48 years (56 females and 24 males) were randomly selected out of 160, from Bhel Hospital (40 subjects) and Gurukul Medical College (40 subjects), Haridwar who were admitted in March 2005 to November 2005. Thereafter 40-40 subjects were randomly assigned to each experimental and control group.

2.3 Tools, Test and data collection:
The following tools and tests were used to measure pre and post data related to selected parameters regarding RA:

Simple Descriptive Pain Intensity Scale (SDPIS) was used to measure the intensity of pain.
Early morning stiffness (in min.) and Number of inflamed joints both were assessed by direct visual observation and direct information given by the patients during clinical assessment, Pulse Rate (Ps/ minute) by palpating in radial artery,
Blood pressure (mmHg) by Mercurial Sphygmomanometer (Mfd by Gupta Son’s India, 5, Golden Park, Dayal Bagh, Ambala Cant), Lymphocyte Count (%) by monocular and binocular microscope, CRP (mg/L) and Uric Acid (mg/dl) by RA 50 chemistry analyzer (made by Bayer Diagnostics, 589, Sayajipura, Ajwa Road, Baroda, Gujrat, India)

2.4 Intervention
Total duration of intervention = 40 days
Timing = 1.30 hrs. (6 to 7:30 am)
Instant relaxation with Gayatri Mantra - 5 mins.
Kunjal twice and Jal Neti thrice/ week
Asanas: Anti -Rheumatic series (Pawanmuktasana – I/joint loosening series) for I\textsuperscript{st} week, Marjari Asana (Cat pose),Vakranasana (Seated spinal twisting), Shashankasana (Rabbit pose), Bhujangasana (Serpent pose), Shalbhasana (Locust pose), Halasana( Plough pose) for 40 m followed by Shavasana (Corpse pose) of 10 m
Pranayamas: sequentially Nadisodhan Pranayama(NSP) - 10m – 3 rounds, Bhashrikia Pranayama(BTP) - 5m - 2 rounds, Bhramri Pranayama(BRP) - 5m – 10 rounds
Meditation: Soham (8 ms) followed by Om chanting (10 rounds- about 2m)
Quarries and feedbacks: 5m

3. Results

3.1 There is insignificant association between post pain intensity and Yoga Package.
The computed $X^2$ value $=34.64 > X^2_{0.005,2}=10.60$. This implied the rejection of null hypothesis: “there is insignificant association between post pain intensity and yoga package” thereby showing a statistically significant positive association between intervened yoga package and pain severity level of RA patients.

3.2 There is insignificant difference in post mean number of inflamed joints between EG and CG.
Computed t-value$=1.55 < t_{0.1,78} = 1.66$

The null hypothesis: “there is insignificant difference in mean number of inflamed joints between EG and CG” has not been rejected and hence the appeared difference in
mean number of inflamed joints between EG and CG may be due to random variability plus Yoga package intervened.

3.3 There is insignificant difference in post mean time stiffness between EG and CG. The calculated t-value = 10.12 far exceeds critical t-value = 2.66 for df= 78 and p<0.005 and hence the null hypothesis “there is insignificant difference in mean time of stiffness between EG and CG” is rejected which implied that intervention yoga package lead remarkable significant reduction in stiffness of RA patients.

3.4 There is insignificant difference in post mean pulse rate between EG and CG.

\[ t = 4.39 > t_{0.005,78} = 2.66 \]

Hence, the null hypothesis: “there is insignificant difference in mean pulse rate between EG and CG” has been rejected and this implied that intervention of yoga package lead significant reduction in mean pulse rate towards normalcy.

3.5 There is insignificant difference in post mean systolic blood pressure between EG and CG.

Here, \[ t=2.18 > t_{0.05,78} = 1.99 \]

Hence, the null hypothesis: “there is insignificant difference in mean systolic blood pressure between EG and CG” has been rejected for df= 78 at p<0.05 which implied that intervention of Yoga Package caused significant reduction in mean systolic BP of RA patients towards average normalcy.

3.6 There is insignificant difference in post mean diastolic blood pressure between EG and CG.

Here \[ t=3.18 > t_{0.005,78}= 2.66 \]

Hence, the null hypothesis: “there is insignificant difference in mean diastolic pressure between EG and CG” has been rejected for df=78 and p<0.005. This proved intervention of yoga package caused significant reduction in average diastolic BP of RA patients towards normalcy.

3.7 There is insignificant difference in post mean lymphocyte count between EG and CG.

Here, \[ t=4.81 > t_{0.005,78}= 2.66 \]

Hence, the null hypothesis: “there is insignificant difference in mean lymphocyte count between EG and CG” has been rejected for df=78 at p<0.005 which implied that Intervention of yoga package caused highly significant reduction in average lymphocyte count towards normal range.

3.8 There is insignificant difference in post mean CRP level between EG and CG.

Here, \[ t=0.197 < t_{0.05,78}= 1.99 \] and \[ t_{0.1,78}= 1.66 \]

Hence, the null hypothesis: “there is insignificant difference in mean CRP level between EG and CG” has not been rejected for df=78 and p<0.1 which implied Intervention of Yoga package didn’t cause significant reduction in mean CRP level of RA patients and slight reduction appeared in mean CRP level among subjects of EG may be due to random variability.

3.9 There is insignificant difference in post mean serum uric acid level between EG and CG.

Here, \[ t=2.41 > t_{0.02,78}= 2.38 \] and \[ t_{0.05,78} = 1.99 \]

Hence, the null hypothesis: “there is insignificant difference in mean serum uric acid level between EG and CG” has been rejected for df=78 and at p<0.02 that implied
Intervention of yoga package caused significant decrease in average serum uric acid level of RA patients in EG towards normal range.

4. Conclusion
Intervened Yogic Package has caused significantly in management of RA and hence yogic intervention given by yoga expert to RA patients along with their medications may be a good complement for everlasting cure.

References