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Yogam and Nilavagai Chooranam: A Comparative Clinical Study for the Treatment of Eraippu Erumal (Bronchial Asthma)

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Abstract: The traditional Siddha medical system is a life science of well-being as well as a form of medicine. It is mostly grounded in philosophy. Thirumoolar, the father of therapeutic yogam, and Patanjali, a great Indian scholar renowned for his spiritual endeavors, are credited with popularizing the practice of yogam. In contemporary medicine, Eraippu Erumal may be associated with bronchial asthma. Cough, tightness in the chest, trouble breathing, and a distinctive melodic note on expiration are the major symptoms (Rhonchi). Due to changes in lifestyle and increased exposure to air pollution, Eraippu Erumal is now highly prevalent in society. Thirty patients who met the inclusion and exclusion criteria were treated in Siddhar Yoga Maruthuvam's outpatient department. Group I patients received the trial medication Nilavagai chooranam for 45 days. Yogasanam was taught to Group II patients in addition to an internal medication. There are substantial differences ($p<0.01$) for VC, IC, FEV, and FVCex between the two groups' mean lung volume values before and after treatment. There is a substantial ($p<0.01$) difference between the parameters Ig E and AEC before and after treatment. According to the clinical trial's findings, Yogam and the trial medication are both clinically beneficial for bronchial asthma. According to the current study, pulmonary functions may improve even more if the participants practice yogam on a regular basis for a longer period of time. One of the greatest asthma remedies is yogam.

Keywords: Siddha medicine, bronchial asthma, Nilavagai chooranam, and Siddhar yogam

Introduction

In addition to being a medical practice, the ancient Siddha medical system is a way of life devoted to fostering health and wellbeing. The majority of its base is philosophical. The lives of Siddhars were devoted to helping God and humanity; they were visionaries, thinkers, and doers. The Siddhars claim that there are 4,448 distinct illnesses that harm people. The Mukkutram, which comprises the Vali, Azhal, and Iyyam, is the source of this number. The knowledge of yogam is attributed to two ancient Indian sages: Sage Thirumoolar, the father of therapeutic yogam, and Sage Patanjali, the author of the Siddha classic literature Thirumandiram. Patanjali is well-known for his spiritual endeavors and is the author of the text yoga sutra (Muthaliyar, 2004).

They have evolved over time into a full-body exercise that tones and fortifies every organ, muscle, and artery. It has been in use for at least 4,000 years, according to evidence. Eraippu Erumal and bronchial asthma may be related in modern medical practice. In recent decades, bronchial asthma has become more commonplace worldwide (Sambasivam Pillai, 2009). Coughing, wheezing, shortness of breath, and tightness in the chest are symptoms of this condition, which is characterized by chronic bronchial inflammation of varied intensities that causes recurring reversible airflow restriction (Anandha Rahasyam, 2003). According to the World Health Organization, asthma affected 262 million people globally in 2019 and is thought to have contributed to 4,55,000 deaths. Yogam is an invaluable addition to the Siddha medical system; although the illness cannot

be cured, it can be effectively managed to reduce symptoms and allow patients to live comparatively normal lives. Yogam is one of the kayalkalpam practices that promotes mental and physical well-being. For thousands of years, quality of life has been a top priority in yoga and other Indian medicinal traditions. Regular yoga practice improves your strength, endurance, and flexibility as well as your social skills, empathy, and emotional regulation. Yogam is India's thirteenth UNESCO-recognized intangible cultural heritage. The Indian government sees a chance to capitalize on the growing popularity of yoga by supporting global occasions such as the International Day of yoga. As a result, an increasing number of people are starting to understand its importance. Eraippu Erumal is more common in contemporary culture as a result of increased air pollution and changing social standards. (1) breathing difficulties, chest pain, a cough that produces chest pain, and an extra wheezing sound (rhonchi). (2) Allergies, sneezing, (3) A patient who complies with requests for a blood sample and radiological examination, (4) People who are willing to participate in a pulmonary function test, which involves estimating how much air they strongly exhaled after taking a deep breath.

Materials and Methods

The potential subjects went through a step-wise screening procedure. The inclusion criteria consisted of (1) Age 19 to 60 years, and (2) Sex--Female and Male. Transgender 78 potential subjects was screened, did not meet the above-described eligibility criteria. Of the 42 eligible subjects, only 34 were included in the study at the end of the 1-week run-in period. 30 subjects were allocated by simple random method, yoga (intervention) group (n = 15) and the medicine group (n = 15). However, three subjects in the yoga group, and one subject in the medicine group discontinued midway in the study. The results presented in this study are based on the data collected from only the 30 subjects who completed the study (yoga group, n = 15; medicine group, n = 15).

Siddhar Yoga Maruthuvam OP's department cared for 30 patients who met the inclusion and exclusion criteria. For 45 days, participants in Group I received Nilavagai chooranam, the study medicine. Those in Group II were also given Yogasanam instruction as an internal medicine treatment.

To make Nilavagai chooranam, the necessary raw pharmaceuticals were procured from a reputable drug store and validated by the appropriate agency (Medicinal Botany and Gunapadam Department). Medicine was then manufactured at the Gunapadam laboratory at National Institute of Siddha after the raw pharmaceuticals had been purified independently.

Ethical considerations:

The Clinical trial was approved by the Institutional Ethics Committee (IEC) of National Institute of Siddha, NIS/IEC/14/2018-19/31-20.09.18 and further registered in Clinical Trial Registry of India (Reg NO.CTRI/2019/07/ 020223). The subjects signed an informed consent form before being enrolled for the study and knew that they were free to withdraw from the study at any stage without assigning any reason.

Statistical analysis:

Microsoft Excel was used to organise the data, with each column representing a distinct variable and each row representing a separate patient. All statistical analysis was done in SPSS. Simple descriptive statistics were run, such as frequency distributions and cross-tabulations. Both quantitative metrics (Mean±SD) and qualitative information (percentages) were reported. SPSS version 22 for Windows was used for the statistical analysis (SPSS Inc., Chicago, USA). The Wilcoxon Signed Ranks Test was used to check for skewed data and determine whether or not the variables followed a normal distribution. A paired sample t-test was used to

compare the dependent variables from the pre- and post-tests. A t-test was used to compare CON with YOG in terms of the dependent variables. At the level of $p<0.05$, we recognised differences as meaningful. Mean and standard deviation were used to describe the data (SD)

Results

Tables 1-4 provide the values of the outcome measures at various periods throughout the trial. Over the course of the trial, the control group's and yoga's pulmonary function indices changed significantly. On the other hand, within the same time period, the subjects in the yoga group showed a consistent and increasing improvement. When compared to the equivalent aseline results, the yoga group's changes in IC, TV, FEV1, FVCex, PEF, MEF25, and MEF25_75 were statistically significant (Table 3). Additionally, during the course of the trial, there were notable group mean differences in PEFR, FEV1, EV1/FVC, and FEF25–75% between the yoga and control groups. Baseline was regarded as a constant covariate for between-group comparisons in PEFR due to the large baseline difference.

There was significant change in IgE, ACE during the study period in both group (Table 4). The IgE, ACE decreased significantly in the yoga group compared to control group , Subgroup analysis in IgE, ACE subjects revealed significant reduction in both yoga and control groups but the amount of reduction observed was more marked in the yoga group than in the control group.

The asthma scores showed an improvement over the study period in both groups (Table 5). But the improvement was achieved relatively earlier and was more complete in the yoga group. At 3 wk, the improvement was statistically significant as compared to the baseline score in the total quality of life as well as each of the four subdomains in the yoga group, but not in the control group. Even by 7-wk, significant improvement was seen in the control group only in symptoms. The asthma score was mean rank yoga group, control group 9.13. Here it is clear that mean rank is less for control group, i.e. medicine group shows more improvement in reduction in scoring. clinically meaningful improvement in quality of life over and above the improvement that the subject would have experienced with conventional treatment alone. Since the p-value is less than 0.05, reject the null hypothesis and accept the alternate hypothesis. That is there is a statistically significant difference in treatment effects of asthma score in both treatment methods. Hence, we compare both methods (Pair 1 and 2) to have the same effect on asthma score.

Here we are using an independent sample t-test for a non-normal sample, that is using Mann Whitney test.

Null Hypothesis:

There is no statistically significant. Table 1: Wilcoxon Signed Ranks Test

Wilcoxon Signed Ranks Test					
		Mean	Std. Deviation	Z - score	p-value
GROUP 1	ASTHMA_B_1	26.4667	2.61498	-3.417	0.001**
	ASTHMA_A_1	10.4000	2.22967		
GROUP 2	ASTHMA_B_2	25.4000	1.63881	-3.436	0.001**

Paired Samples Test - MEDICINE AND YOGA GROUP

Pair	Paired Differences						t	Sig. (2-tailed)
	Mean			Std. Deviation	95% Confidence Interval of the Difference			
	Before	After	Difference		Lower	Upper		
VC	2.90	3.13	-0.23	0.68	-0.60	0.14	-1.316	0.209
IC	1.72	2.03	-0.31	0.31	-0.48	-0.14	-3.843	0.002
TV	1.02	1.58	-0.56	0.65	-0.92	-0.20	-3.336	0.005
ERV	1.30	1.73	-0.43	1.07	-1.02	0.16	-1.552	0.143
FEV1	1.97	2.64	-0.67	0.44	-.91	-0.43	-5.942	0.001
FVCex_	2.55	2.82	-0.28	0.27	-0.43	-0.13	-3.982	0.001
FEV1_FVC	77.60	80.73	-3.13	6.75	-6.87	0.60	-1.798	.094
PEF	3.91	4.51	-0.60	1.05	-1.18	-0.01	-2.190	0.046
MEF25	0.96	1.18	-0.22	0.20	-0.34	-0.11	-4.197	0.001
MEF50	2.01	2.12	-0.11	0.44	-0.35	0.14	-.946	0.360
MEF75	3.25	3.73	-0.49	1.13	-1.11	0.14	-1.672	0.117
MEF25_75	1.79	1.98	-0.19	0.34	-0.37	0.00	-2.105	0.054
tex_	3.78	3.74	0.04	0.80	-0.41	0.49	0.193	0.850

Table 3: **Summary of Hypothesis**

Test Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of Asthma_Score is the same across categories of Group.	Independent-Samples Mann-Whitney U Test	<0.001[1]	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is 0.05.

[1]Exact significance is displayed for this test.

Table 4: Independent Sample Test

Independent Samples Test						
Group		N	Mean	Std. Deviation	T-value	P-Value
IG_E	Medicine Group	15	149.2400	212.35437	-0.343	0.734
	Medicineand Yoga Group	15	172.2000	148.29324		
AEC	Medicine Group	15	203.8667	287.14378	0.672	0.507
	Medicineand Yoga Group	15	142.6667	204.63266		

difference between the median values in asthma scores on different treatment methods “Medicine” and “Medicine and Yogam”.

Alternate Hypothesis: There is statistically significant difference between the median values in asthma score on different treatment methods “Medicine” and “Medicine and Yogam”.

Discussion

This ailment Based on the authorised protocol, 30 patients with Eraippu Erumal were chosen for a clinical investigation using Nilavagai chooranam. The trial was conducted without incident, and no untoward responses to the drugs were reported.

Before and after therapy, haematological parameters and pulmonary function tests were taken. After

therapy, statistical analyses were conducted. No serious side effects were reported throughout the study's time period.

The mean values of the four measures (VC, IC, FEV, and FVCex) have all improved dramatically following therapy, and there are statistically significant changes between the two sets of values ($p<0$). There is a statistically significant ($p<0.01$) change in the Ig E, AEC parameter between the pre- and post-treatment periods.

When patients in both groups were compared, those in Group I had a statistically significant ($p<0.01$) improvement in their Asthma score compared to those in Group II (Fig. 1). Clinical symptom improvement before and after therapy showed that the trial medication and yogam were effective in treating symptoms such as shortness of breath, chest tightness, wheezing, coughing, sneezing, and sleep disturbances. It has been

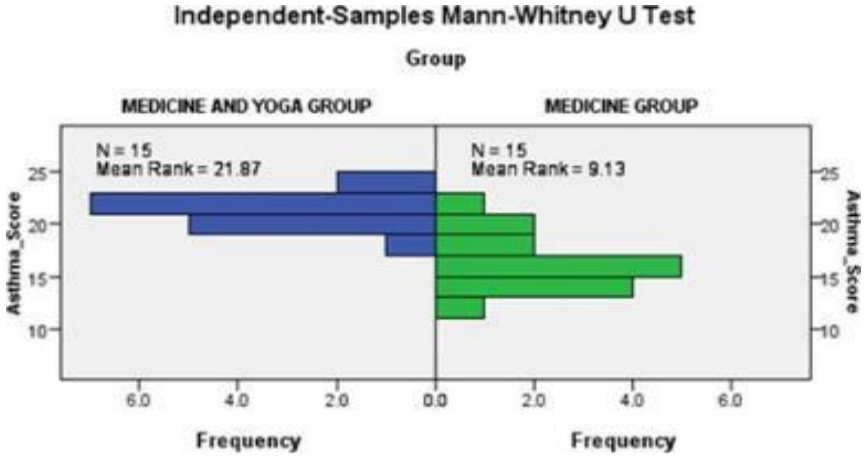

Fig. 1: Independent –Samples Mann-Whitney U Test.

statistically determined that the combination of Nilavagai chooranam and yogam is both effective and significant ($p<0.01$). Hence, it is efficient in enhancing patients' health, allowing them to engage in everyday activities without assistance.

Our findings of a beneficial impact of yoga on bronchial asthma in various end measures are in line with those of numerous other research. Several of yoga's most accessible and obvious aspects are chosen for their potential to aid in illness prevention and management. As a kind of complementary and alternative medicine, our intervention has made use of yoga.

Yoga and trial medication (group) patients showed statistically and clinically substantial improvements in Asthma symptoms, IgE, and AEC compared to baseline symptoms and control group data.

Conclusion

According to the findings of the current study, practicing yogam may improve pulmonary functions; if people practice yogam for even longer periods of time, this impact might be amplified. Yoga is one of the best treatments for asthma. It is safe because it is not a medication-based therapy. A larger-scale trial utilizing the same medication in combination with yogam for a longer period of time is necessary due to the encouraging clinical results, which may offer fresh perspectives on the management of Eraippu Erumal.

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