



Assessment of the Routine Functional Activities in the Comparative Siddha Medical Treatment for Symptomatic Knee Osteoarthritis in Jaffna District, Sri Lanka

S. Vinotha^{1*}, I. Thabrew² and S. Sri Ranjani¹

¹Unit of Siddha Medicine, University of Jaffna, Sri Lanka.

²Institute of Biochemistry, Molecular Biology and Bio Technology, University of Colombo, Sri Lanka.

Authors' contributions

This work was carried out in collaboration between all authors. Author SV designed the study, performed the statistical analysis, wrote the protocol and first draft of the manuscript. Authors IT and SSR managed the analyses of the study. Author SSR managed the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

Aims: Knee Osteoarthritis (KOA) is a most common form of the rheumatic disease and relatively the prevalence is higher in Asians than in Western populations. KOA is one of the five leading causes of disability among elderly men and women. The scope of this study was to assess the routine functional activities by WOMAC score in the Siddha medical treatment for symptomatic KOA in Jaffna District, Sri Lanka.

Study Design: This was an open, randomized, parallel group of comparative clinical trial.

Place and Duration of Study: This study was carried out in selected Government Ayurveda Hospitals in Jaffna District, Sri Lanka between January 2013 and August 2014.

Methodology: This clinical trial was conducted based on American College of Rheumatology (ACR) classification, 837 KOA subjects were screened and 250 KOA subjects of both genders, aged ≥ 40 years were randomly selected at Out Patients Department of Ayurveda Hospitals. Selected subjects were alternatively divided into two groups as group A and group B. The group A were received 'Medicine A' {2 capsules of 1 g *Amukkirai Chooranam* with *Thalangai ennai* (external application)} while group B was received 'Medicine B' {2 capsules of 1g *Vellarugu Chooranam* with *Thalangai ennai*} twice daily, up to 40 days. The modified Indian version of Western Ontario and McMaster Universities Arthritis Index (WOMAC) score was the primary outcome variable used to assess the self-reported pain, stiffness and physical functions based on the life style activities. The collected data were analyzed by the SPSS version 17.

Results: There were 177 (70.8%) female and 73 (29.2%) male with a mean age of 57.02 (SD \pm 8.78) years. At the end of treatment, for group A, the mean total WOMAC score was reduced from 156.03 \pm 53.83 to 78.68 \pm 37.11 while for group B, that score was reduced from 165.29 \pm 57.19 to 83.79 \pm 41.08. Although there was a significant reduction in pain, stiffness, physical function and total score ($P=0.000$) for WOMAC index during routine functional activities at end of the treatment in each group, there was no significant differences ($P>0.05$) observed between both groups.

Conclusion: The Present study also strengthens the contemporary area of comparative effectiveness of selected siddha medication (both *Amukkirai Chooranam* and *Vellarugu Chooranam* together with *Thalangai ennai*) in routine functional activities in the treatment of symptomatic KOA treatment over 40 days of therapy.

Keywords: Assessment; factors; knee osteoarthritis; life style; Siddha Medicine; symptomatic; treatment; WOMAC score.

1. INTRODUCTION

Knee Osteoarthritis (KOA) is a most common form of rheumatic disease and a progressive degenerative joint disorder characterized by gradual loss of cartilage [1]. KOA results from mechanical and idiopathic factors that alter the balance (irreversible pathological changes) between degradation and synthesis of articular cartilage and sub chondral bone and characterized by slowly developing joint pain, short-lived morning stiffness, reduced function, instability, deformity, joint swelling, crepitus and activity limitations [2,3]. Disease progression is usually slow but can ultimately lead to joint failure with pain and disability [4].

KOA is one of the five leading causes of disability among elderly men and women and the risk for disability from KOA is as great as that from cardiovascular diseases [5]. A previous study mentioned that KOA is likely to become the fourth most common cause of disability in women and the eighth most common cause in men [6]. The aetiology of KOA is not entirely clear, yet its incidence increases with advancing age [7,8] and in women. Risk factors for developing KOA are well known and include older age, gender, obesity, previous injury or trauma and genetic factors, etc. [3,6]. The findings of the risk factors associated with KOA study in Jaffna District indicated that there was a significant association

between age, sex and BMI with KOA. [9]. Two systems of Medicine namely Allopathic, and Indigenous are mainly practised in Sri Lanka. In all the three indigenous systems (Ayurveda, Siddha and Unani Medicine) in Sri Lanka, plants play a major role and constitute the backbone of the system. Siddha Medicine is one of the Traditional Medicine and popular among the Tamil speaking people of Northern and Eastern Provinces of Sri Lanka [10]. In general, Siddha medications are mainly of herbal origin. In Siddha system, equal importance has been given to internal as well as external medicine because Siddha Medicine advocates 32 types of internal and 32 types of external medicine with their shelf life [11].

The researcher observed during her practice and Medical Officer period, that *Amukkirai* and *Vellarugu chooranam* (Single herbal powder medicine) as internal medicine and *Thalangai ennai* (Medicated oil) as external application were very effective in the treatment of musculoskeletal conditions such as osteoarthritis, back pain, joint pain etc. As the scientific approach of efficacy is not tested so far, this study was planned to assess the lifestyle activities by WOMAC Index Score in these two combinations {*Amukkirai Chooranam* (A.C) with *Thalangai ennai* and *Vellarugu Chooranam* (V.C) with *Thalangai ennai*} of siddha medicines for the treatment of symptomatic KOA.