



Original article

# Comparative clinical evaluation of leech therapy in the treatment of knee osteoarthritis

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## Abstract

**Introduction:** Historically physicians have used leech therapy for various ailments. *Hirudo medicinalis* is commonly used in western countries for medicinal purpose and in other parts of the world, different species are used. In India, *Hirudinaria granulosa* species is used traditionally for this purpose. Although this treatment approach has been used for many centuries, there is little scientific data on its effectiveness. The aim of this study was to validate the efficacy of leech therapy in knee osteoarthritis.

**Materials and methods:** This study was a randomized, parallel group, controlled trial with the approval of Institutional ethics committee. The total of 60 patients, 30 in each group, completed the study. The outcome measures included; Visual Analogue Scale (VAS), Knee injury and Osteoarthritis Outcome Score (KOOS), range of motion, 15-m walking time and knee circumference were used to assess clinical efficacy. The test group received leech therapy along with a Unani formulation. The other group (control) received the Unani formulation only.

**Results and discussion:** The test group demonstrated highly significant improvements in evaluated parameters when compared with baseline values. Statistically significant differences were observed in KOOS total score and its sub scores ( $P < 0.0001$ ), VAS ( $P < 0.0001$ ) at the 4th week when compared with the control group. The reduction in pain, other symptoms and physical function, were observed even 4 weeks after the treatment ( $P < 0.0001$ ).

**Conclusion:** The leech therapy seems to be an effective treatment for reducing symptoms of knee osteoarthritis and improving physical function with no major adverse effects.

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**Keywords:** Leech therapy; Knee joint; Osteoarthritis; Clinical study; Unani medicine; *Qurse mafasil*

## Introduction

Leech therapy is a treatment modality where leeches are applied to a particular area of body in order to treat certain ailments. Leech application has been used throughout history from ancient times [1], and currently it is used in modern medicine particularly in plastic or reconstructive surgery [2]. The term 'leech' has two distinct meanings according to old English (the

Anglo-Saxon language); one is physician and other is blood-sucking worm [3].

Bloodletting is an ancient therapy, which has been practiced since Stone Age. Ancient healers believed that many ailments were caused due to inappropriate, excessive collections of blood and its constituents [3]. Hippocrates (the Father of medicine) believed that the veins were the site of pathologic humours [4]. Therefore, ancient physicians used bloodletting more frequently, when treating many illnesses. As an alternative to instrumental bloodletting, the leech offered some advantages; leeching is slower, less painful; many practitioners favoured leech therapy as it has more quantitatively dependable extraction of blood [5].

They are widely used in plastic surgery to treat venous congestion of skin grafts [6,7], also used in breast reconstruction, replanted digits, ears, lips and nasal tips in reconstruction surgery

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