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Cupping therapy on low back pain. A systematic review

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Abstract

Introduction: Low back pain (LBP) encompasses a range of symptoms such as discomfort, muscle tension, tenderness, and stiffness in the area between the lower rib cage and the buttocks. The causes of LBP can be divided into two primary categories: specific low back pain, which has identifiable sources, and non-specific low back pain (NSLBP), which lacks a clear cause. Studies indicate that most patients will experience at least one recurrence of LBP within the span of a year. Additionally, around 5 to 10 percent of acute low back pain cases can progress to chronic low back pain (CLBP). Interestingly, around 90% of LBP instances are not associated with identifiable physical anomalies. This poses a significant challenge for healthcare systems, especially considering the persistent and often unclear nature of these pain conditions. To address lower back pain, three common approaches are used: medications, surgical procedures, and rehabilitation programs. In recent years, there has been a growing trend toward complementary and alternative medicine (CAM) in developed countries, largely due to the side effects associated with traditional treatment methods.

Aim: The aim of this article is to assess the effectiveness of treating low back pain through cupping.

Review methods: A comprehensive analysis of research papers available on PubMed and Google Scholar was undertaken using the searchterms encompassing the following keywords: cupping therapy, low back pain (LBP), chronic back pain, complementary and alternative medicine (CAM).

Conclusion: In traditional medicine, treatment methods typically involve options like non-steroidal anti-inflammatory drugs, opioids, muscle relaxants, steroids, and in some cases, surgery. However, emerging research suggests that cupping therapy could be a promising

alternative for managing these conditions. To fully understand how long cupping is effective for alleviating lower back pain (LBP), further studies and appropriate follow-ups are essential.

Keywords: cupping therapy/ low back pain/ chronic back pain/ pain relief/ complementary and alternative medicine

Introduction

Low back pain (LBP) refers to a collection of symptoms that include discomfort, muscle tightness, tenderness, and/or stiffness located between the lower rib cage and the gluteal folds. This condition may occasionally be associated with sciatic pain [1,2]. The lumbar region of the spine is frequently identified as the primary site of discomfort in musculoskeletal disorders, resulting in pain, functional impairment, and a decline in overall quality of life [3]. Temporal low back pain (LBP) classification is typically categorized into three phases: acute (lasting less than 6 weeks), subacute (ranging from 6 to 12 weeks), and chronic (persisting beyond 12 weeks) [2]. The underlying pathological causes of LBP can be classified into two main types: specific low back pain, which has identifiable origins, and non-specific low back pain (NSLBP), where no distinct pathology can be determined [2]. Research shows that patients usually experience at least one recurrence of low back pain (LBP) within a year [4-6]. About 5 to 10 percent of cases of acute low back pain (LBP) can develop into chronic low back pain (CLBP) [7]. Recurrent lower back pain (LBP), characterized by a minimum of one episode within the past year or pain occurring twice weekly, alongside chronic symptoms, defined as pain persisting for three months or longer, are commonly observed in patients suffering from LBP [7]. Research suggests that approximately 90% of cases of low back pain (LBP) are not linked to identifiable pathoanatomical factors. This presents a considerable challenge for healthcare systems, given the persistent, chronic, and often ambiguous nature of such pain conditions [8]. Various strategies are employed to help improve range of motion,

alleviate pain, and enhance the overall quality of life for individuals dealing with lower back pain (LBP). These strategies encompass therapeutic exercises, manual therapy techniques, educating patients on lifestyle modifications, managing medications, and utilizing modalities like cryotherapy, heat therapy, ultrasound, and electrical stimulation. Three prevalent approaches to managing lower back pain (LBP) include pharmaceutical therapy, surgical interventions, and rehabilitation programs. Pharmacologic therapy is the primary treatment approach most commonly employed in clinical practice [9]. Acetaminophen and non-steroidal anti-inflammatory drugs (NSAIDs) are commonly used treatments that may offer effective pain relief for patients suffering from lower back pain (LBP) [9,10]. However, the use of pharmacologic therapies is generally discouraged for chronic pain management, as these medications carry the risk of liver damage and may lead to hemorrhagic gastritis [11]. For second-line intervention, physiotherapy and exercise are supported as effective modalities for managing chronic low back pain (LBP). Research indicates that therapeutic interventions can successfully alleviate chronic pain over a period of 12 months [9]. Nevertheless, access to rehabilitation programs remains limited for patients suffering from chronic LBP, primarily due to the financial, spatial, and training requirements associated with these programs [12]. In cases of third-line treatment for lower back pain (LBP), surgical intervention can be a viable option when pain becomes intolerable [9]. However, it is important to note that surgical procedures can be expensive and may pose a higher risk to the patient [13]. Therefore, surgical options should be considered only after exhausting non-invasive treatments, such as medication and physical therapy [14]. Due to the adverse effects associated with conventional therapies, there has been an increase in the adoption of complementary and alternative medicine (CAM) in developed nations over the past decade [15]. Recent studies have underscored the potential advantages of therapies directed at the myofascial tissue in patients experiencing low back pain [16]. Among the alternative interventions for both acute and chronic back pain that focus on these myofascial tissues is therapeutic dry cupping [17].

Materials and methods

A comprehensive analysis of research papers available on PubMed and Google Scholar was undertaken using the searchterms encompassing the following keywords: cupping therapy/ low back pain (LBP) / chronic back pain / complementary and alternative medicine (CAM).

Cupping therapy

Cupping therapy is a time-honored technique for alleviating and enhancing the condition of low back pain [18]. Originating from traditional Chinese medicine (TCM), it is often recognized as a complementary or alternative medicine (CAM) approach within Western medical practices [19,20]. Traditional Chinese Medicine (TCM) posits that cupping therapy may improve blood circulation and reduce pain associated with blood stasis, ultimately enhancing overall physical function [21]. The utilization of high negative pressure in cupping therapy enhances the circulation of blood and lymphatic fluid, resulting in improved oxygenation and metabolic activity within localized tissues- this process effectively mitigates inflammation and facilitates the removal of harmful toxins [21]. In wet cupping therapy, the process of bloodletting facilitates the release of harmful substances from the tissues, triggering modifications in central nociceptive processing mechanisms, this alteration enhances the body's response to pain signals, effectively diminishing pressure pain and lowering the pain threshold [22, 23].

Cupping therapy is primarily classified into two distinct methods: dry cupping and wet cupping. Dry cupping entails the placement of cups directly on the area of pain or designated acupoints, utilizing negative pressure suction or heat to establish a vacuum effect within the cup. Conversely, wet cupping involves the process of scarification, wherein small incisions are made on the skin prior to positioning the cup over the treatment site, which is typically located at the acupoint or the region experiencing maximum discomfort.

Results

The study conducted by Zhang et al. [24] evaluated the effectiveness of cupping therapy in relation to treatment duration, various manipulation techniques (including different types of cupping and targeted treatment locations), as well as classifications of low back pain (LBP). The results indicated that cupping therapy was effective in reducing pain at the conclusion of the intervention; however, there was no significant ongoing improvement observed following the treatment sessions. Furthermore, the findings highlighted that the efficacy of cupping in pain relief varied according to the specific LBP classifications and the sites of application (e.g., acupoints versus the lower back area). The research suggests that, in the management of LBP, cupping therapy may provide a superior and more sustainable outcome when compared to conventional medication and usual care practices. Additionally, evidence indicates that

cupping therapy may progressively diminish functional disability in subsequent follow-ups, although it does not yield immediate pain relief in the early stages of the intervention.

Silva et al. [25] conducted a study revealing that dry cupping therapy does not offer any significant advantages over sham cupping when it comes to alleviating pain, enhancing physical function, improving mobility, boosting quality of life, addressing psychological symptoms, or reducing medication use in individuals suffering from non-specific chronic low back pain.

Research by Kim et al. [26] revealed that participants in the wet-cupping group experienced a reduction in their NRS pain scores. Furthermore, this group also required less acetaminophen over the course of four weeks.

Mardini-Kivi et al. [27] found that cupping is just as effective as standard care for reducing pain intensity after one month. However, by the three to six-month mark, its effectiveness appears to exceed that of standard treatments. Some researchers believe that the long-term benefits of cupping may be limited to specific outcomes, like improvements in health-related quality of life and physical function [28,29].

Addittionally cupping therapy has shown to be substantially more effective for chronic low back pain (CLBP) when compared to ibuprofen, acetaminophen, and typical care methods [29-32].

Findings by Harper et al. [33] from their case series suggest some positive effects of combining static and dynamic cupping on pain relief and muscle flexibility in three participants with lower back pain (LBP). However, they emphasize that these outcomes should be viewed with caution. Additional research, particularly randomized trials with strict methodologies and control groups, is needed to thoroughly assess the effectiveness of using both static and dynamic cupping techniques for treating musculoskeletal issues and pain.

Wani et al. [34] also carried out a study involving 6 patients to assess the effectiveness of wet cupping for back pain relief. The findings indicated a noticeable reduction in pain over a 28-day evaluation period.

Conclusion

Cupping therapy plays a notable role in alleviating pain, enhancing sensory and emotional well-being, and improving overall functionality. Further research is necessary, including appropriate follow-ups, to explore the duration of cupping's effectiveness on lower back pain (LBP). In conventional medicine, treatment options commonly include non-steroidal anti-inflammatory drugs, opioids, muscle relaxants, steroids, and sometimes surgery. However,

recent advancements in medical science indicate that cupping therapy may serve as a highly effective alternative for these conditions.

Author's contribution

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Software: not applicable;

Verification: Natalia Rulewska, Kacper Janowski

Formal analysis: Filip Grabowski, Dagmara Neska

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