

Al-hijamah (wet cupping therapy of prophetic medicine) as an Adjuvant Non-operative Management for Treating Simple Knee Joint Sport Injury and Associated Pain (A Case Study)

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Abstract A 16 year old male football player presented with right anterior knee pain of 3 days duration that was accompanied by tenderness, mild swelling and painful walking after falling down to the ground during a sport game. Right knee joint X-ray revealed no bone fractures or displacement. Orthopedic evaluation revealed no suspicion of a meniscus lesion or cruciate ligaments injuries and there was no need for additional investigations, or an MRI. Biochemically, liver and kidney function tests were normal. Response to non-steroidal analgesics was not satisfactory. The patient was experiencing severe pain upon knee squatting and was not able to do regular walking and knee bending during regular walking. Treatment was initiated using Al-hijamah (wet cupping therapy of prophetic medicine). Al-hijamah works via clearing the tissues and blood from causative pathological substances e.g. pain-causing substances as inflammatory substances, prostaglandins, substance P and others according to the evidence-based Taibah mechanism (Taibah theory). Importantly, cupping therapy was reported to increase the production of heat shock proteins and endogenous opioids (β -endorphins) that act as pain-killers. Cupping therapy is also reported to decrease the serum level of the pain-related substance P. Some previous studies have reported that skin puncturing during Al-hijamah increased the release of endogenous opioids such as endorphins, enkephalins, and dynorphins, which intensified the cupping therapy-induced analgesic effects. Al-hijamah was performed via applying a single medium-sized cup at the tender area at the frontal lower aspect of the right patella that included the whole painful area. The pain immediately resolved and the patient took rest for about 2 days and returned to normal activities including a return to playing football. The patient reported complete resolution of the symptoms in one week's time with no symptoms recurrence on follow up for several months later. In conclusion, Al-hijamah is a wonderful promising conservative management for treating minor sports trauma and associated pain.

Keywords: Al-hijamah, anterior knee injuries, tenderness, sucking cups, X-ray

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1. Introduction

Sport-induced injuries to the knee joints are quite common particularly in athletes, young people and when football games are practiced on hard lands or in non-well-established playgrounds. There is no clear definition of anterior knee pain [1] as patients can present with various symptoms. Functional deficiency, crepitus, and/or instability are all possible. Normal daily activities

that frequently cause discomfort or make it worse include walking downstairs, squatting, squeezing the clutch pedal in a car, wearing high-heeled shoes, or sitting for extended periods of time with the knees bent, sometimes known as the "movie sign". Moreover, patients may feel a little unsteady, especially when navigating slopes or stairs [2]. A feeling of instability or giving way may be reported by people with overuse injuries, although this may not actually be a true giving way (which is linked to internal knee damage), but rather a neuromuscular inhibition brought on by pain, muscle weakness, patellar or joint

instability [3]. Non-surgical treatment may be less effective in cases when there is a bone anomaly or retinaculum dysfunction, but operative treatment should only be used in cases where conservative treatment has failed in patients with correctable anatomical defects [4].

Al-hijamah (wet cupping therapy of prophetic medicine) is also called the triple S treatment that includes skin suction, scarification and suction is used to treat so many painful conditions. Al-hijamah works via clearing the tissues and blood from causative pathological substances e.g. pain-causing substances according to the evidence-based Taibah mechanism (Taibah theory) [5,6,7] and is strongly recommended in prophetic medicine to treat trauma-induced pain [8].

2. Patient Information

A 16-years old patient presented with severe pain in the right knee just below the patella with tenderness at the upper part of the tibia following falling down to the ground during a football match. The patient had an average body built and weighed about 90 kg. The patient was not receiving any drugs or medications and had no family history of musculoskeletal diseases.

3. Clinical Findings

Immediately after falling to the ground, there was limited mobility of the right knee joint with severe pain when moving the knee. X-ray evaluation was normal (Figure 1). The anterior aspect of the knee was tender and there was denuded skin areas that later healed with scabs (crusts) (Figure 2A). Tenderness of the frontal aspect of the knee persisted for the next few days. The patient was unable to go for regular walking, practice the daily prayers or bend his right knee.

4. Diagnostic Assessment

Urgent orthopedic assessment was done where a knee X-ray was performed and revealed intact bones and knee joint with no fractures or deformities (Figure 1). The orthopedic assessment revealed a normal knee joint with simple sports injury causing a painful condition. There was no need for further radiological evaluation using either CT or MRI. Biochemical blood tests e.g. liver function tests and kidney function tests were performed and were within the normal ranges (Table 1).

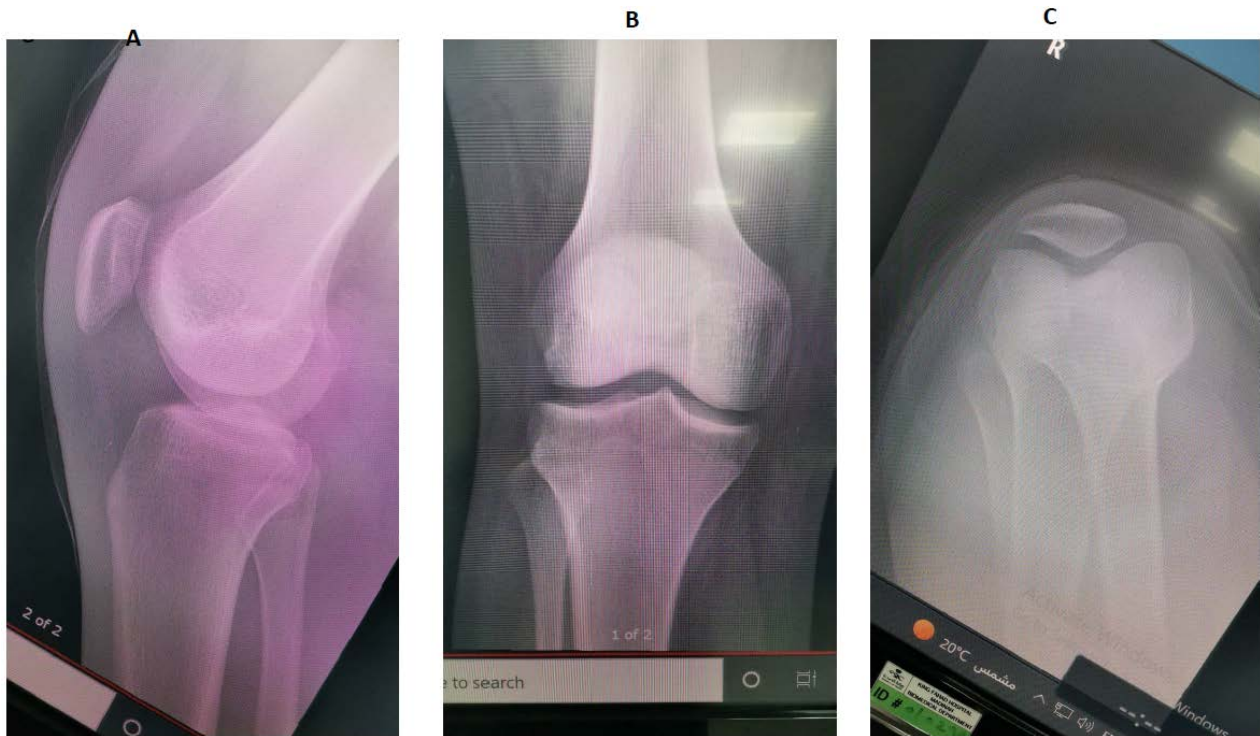


Figure 1. A-C: Initial radiological evaluation of the knee sport trauma. Plain X-ray of the right knee joint showing no fracture or displacement seen. It was correlated with the clinical findings and improvements with Al-hijamah treatment. No need for further assessment, or MRI was suggested. No suspicious of meniscus lesion was there.

Table 1. Biochemical liver and kidney function tests after knee trauma were within normal ranges

Biochemical tests	References range
Urea	26.9 mg/dl (16.6 – 48.5 mg/dl)
Creatinine	0.76 mg/dl (0.7 – 1.2 mg/ dl)
Uric acid	6.7 mg/dl (3.4 – 7 mg/dl)
AST	16.2 U/L (0 – 40 U/L)
ALT	17.8 U/L (0 – 41 U/L)
Total bilirubin	0.297 mg/dl (0 – 1.2 mg/dl)
Direct bilirubin	0.107 mg/dl (0 – 0.3 mg/dl)

5. Therapeutic Intervention

Full knee rest was advised. Ketoprofen gel, oral paracetamol (500 mg tablets three times daily) and oral ibuprofen (400 mg twice daily) were prescribed. Four days later, the pain persisted and the patient could not cope with the painful condition. The patient was presenting with a mild swelling at the trauma site since the first day and the minor trauma caused a tiny skin wound that rapidly healed with crusts formation (Figure 2A-B).

Al-hijamah was advised where strict sterilization using povidone iodine was done (Figure 1C and figures 2 - 4). A medium-sized sucking cup was applied at the painful site. One medium-sized suction cup was quite enough to

include all the painful trauma area where manual suction using a hand-held suction pump was done (Figure 3A). The suction cup was removed and superficial skin scarifications using a sterile scalpel were done immediately and were limited to the inside of the cup margins resulting in the formation of tiny bleeding points (Figures 3B-C). The suction cups were applied again and suction was done using the hand-held pump to ease the bloody excretion and clearance of the local joint tissue beneath the sucking cup (Figure 4A). The bloody excretion was cleaned and the sucking cup was applied twice more to facilitate completing the local clearance of the tissues (Figure 4B). Then, local sterilization was done once again using povidone iodine (Figure 4C).

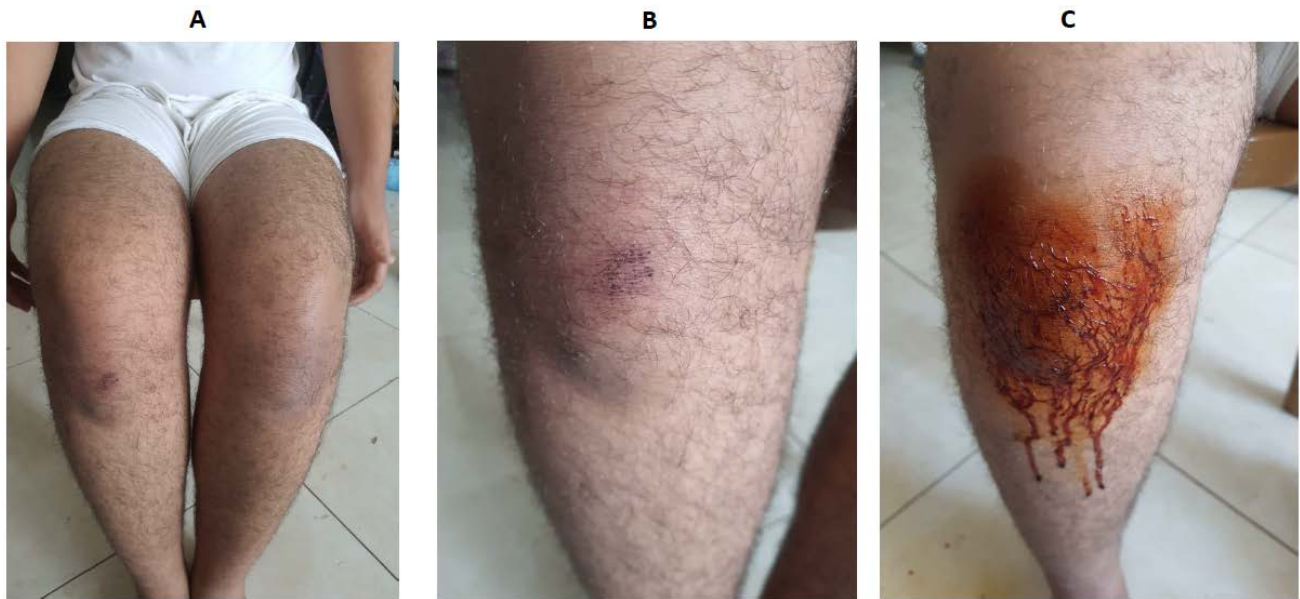


Figure 2. A photograph of the trauma site (below patella) in preparation for Al-hijamah. A-B. The trauma affected the knee just below the right patella causing a minor tender wound. C. Sterilization using povidone iodine was done at the injury site for applying a medium-sized suction cup to include the whole injury area (in agreement with prophetic medicine recommendation to treat trauma with Al-hijamah) [8]

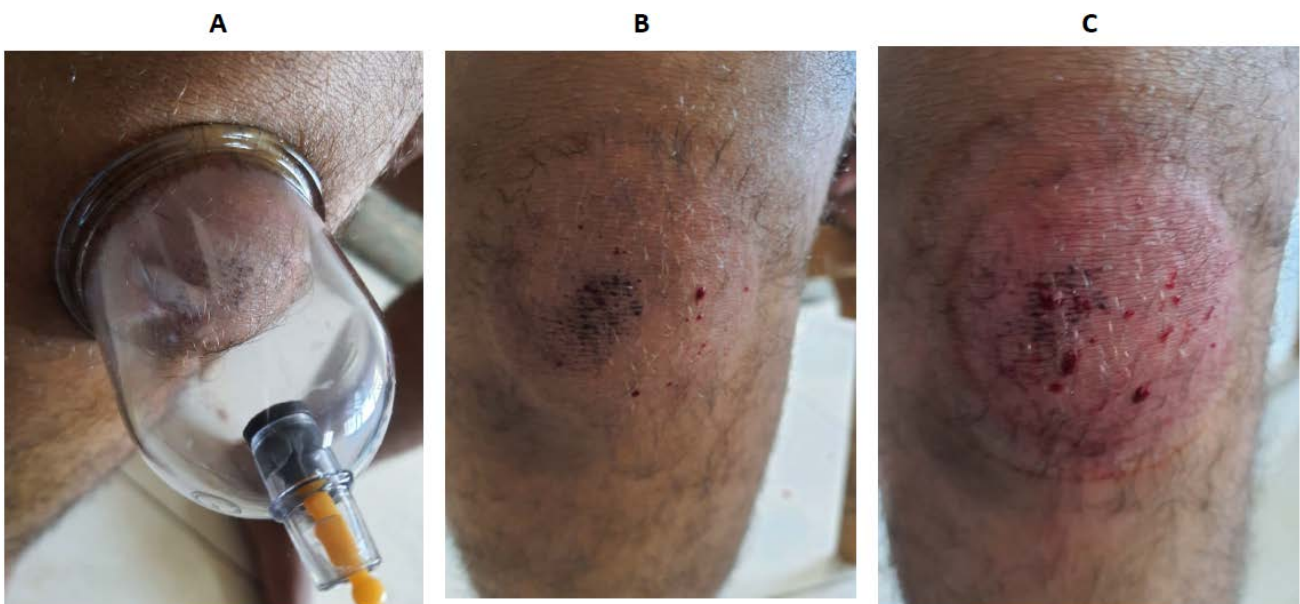


Figure 3. 1st suction step (cupping step) of Al-hijamah is followed by immediate skin scarifications (scratching using a sharp sterile scalpel). A. The A medium-sized suction cup included the whole injured area. B-C: Immediately after skin scarifications, the skin barrier (keratinized layer of epidermis) gets opened and a tiny blood excretion starts to come out



Figure 4. Second suction step (cupping step) of Al-hijamah causes increased bloody excretion carrying out the pain-causing substances. This causes local tissue clearance and pain relief

6. Therapeutic Outcomes

An immediate pain relief was obtained following the completion of Al-hijamah. The tenderness completely disappeared. The patient was quite able to resume his ordinary daily activities and walking.

7. Follow-up

The improvement after Al-hijamah persisted for a long time following the procedure. The use of Al-hijamah as a clearance and analgesic treatment following sports injuries is recommended.

8. Discussion

In this case study, the author presents a young non-athlete boy 16 years old who got a trauma to the anterior aspect of his right knee including the patella. Biochemical laboratory investigations were within the normal ranges (Table 1).

As sportive knee injuries are common, the non-operative management of knee ligament injuries is crucial, especially for isolated grade III sprains (complete tear) of the posterior cruciate ligament and all grade I and II sprains (partial tears) of knee ligaments. Moreover, an elderly sedentary individual may need non-operative treatment for an isolated complete rupture of the anterior cruciate, medial or lateral collateral ligament, or both. Some injuries certainly require an operating strategy when they are urgent. Two to three weeks of knee immobilization in a rehabilitative knee brace with the knee locked in a 40 to 45 degree flexion position may be part of the non-operative rehabilitation procedures. To prevent the damaging effects of immobilization on cartilage, bone, muscles, tendons, and ligaments, and to improve the orientation, this requires allowing a progressively increasing regular mobilization in the brace to enhance the

orientation of collagen fibers to the stress lines of the healing ligament. The aim of rehabilitation is a quick and complete return to work and sports after 4 to 8 weeks. Isometric, isotonic, isokinetic, and eccentric movements with or without resistive equipment can all be employed throughout the muscular mobilization and training phases of the therapy protocol to strengthen the hamstrings and quadriceps muscles. Moreover, continual passive motion can be employed to remedy a persistent extension or flexion deficit, and electrical stimulation may help avoid muscle waste brought on by immobility. After the injury, jogging is typically permitted for 3 to 6 months, and an athlete can typically resume full activity and competitive sports after 6 to 12 months [9].

Importantly, pain-causing substances e.g. substance P, prostaglandins, free radicals, oxidant substances and inflammatory mediators increase locally at the site of trauma causing pain and inflammation. That is why non-steroidal anti-inflammatory agents are prescribed to treat these patients. However, a long list of side effects are always encountered upon using such analgesics particularly at high doses and prolonged intake that may necessitate using natural antioxidants as Ajwa date fruits to alleviate such toxicities (particularly of diclofenac) and related harm [10]. Cupping therapy decreases also the serum level of the pain-related substance P [11]. Wet cupping therapy could increase anti-inflammatory lipids and reduce pro-inflammatory lipids in both skin and plasma. Al-hijamah (wet cupping therapy of prophetic medicine) reduced the secretion of the inflammatory substances IL-6 and TNF- α induced by lipopolysaccharide (LPS) in vivo and showed that cupping treatment modulated the metabolic balance between the pro- and anti-inflammatory polyunsaturated fatty acids [12]. In previous reports by the author et al., Al-hijamah is wet cupping therapy of prophetic medicine that is capable of clearing the tissues and serum from causative pathological substances according to the evidence-based Taibah mechanism (Taibah theory). Al-hijamah is capable of clearing the tissues and serum of pain-causing substances, inflammatory mediators and

others [6]. In prophetic medicine, Prophet Muhammad Peace be upon him used Al-hijamah to treat trauma (non-fracture traumatic events) as a local relief of pain [8]. Importantly, cupping therapy was reported to increase the production of heat shock proteins and endogenous opioids (β -endorphins) that act as pain-killers [13]. Some previous studies have reported that skin puncturing during Al-hijamah increased the release of endogenous opioids such as endorphins, enkephalins, and dynorphins, which intensified the cupping therapy-induced analgesic effects [14]. The methods of practicing wet cupping therapy and the comparable benefits among them were previously reported by the author et al. [7]. In this case study, Al-hijamah is more beneficial than dry cupping therapy (where no excretion of pain-causing substances occurs) [7]. Reported additional benefits of Al-hijamah include excreting free radicals [15], and enhancing the natural immunity [16,17]. This confirms the previous report where Al-hijamah maximally and significantly improved the pain intensity of carpal tunnel syndrome [18].

This case study agreed with a previous report that presented the non-surgical treatment and management of adolescent patients presenting with acute knee pain due to medial meniscus tear, with or without a medial collateral ligament sprain [19]. Sports injuries also include a substantial percentage of medial collateral ligament injuries occurring as a result of sustained trauma during playing sports. Medial collateral ligament injuries are the most frequent ligamentous knee injuries [20].

Tension injuries to the medial ligamentous components of the knee are known as medial collateral ligament sprains. They typically arise from a severe impact to the knee's lateral side. Often, the diagnosis can be made based on a distinctive clinical examination. Over the years, the way these injuries are treated has changed. Nowadays, a vigorous early functional rehabilitation program and light support are advised for treating isolated medial collateral ligament sprains. [21]. Sport injuries to the knee and medial collateral ligament are very common and there seems to be a consensus supporting the conservative management of grade I and II tears [22]. Al-hijamah is strongly recommended in prophetic medicine as an adjuvant treatment to such conditions [8].

In this case study, the sucking cups were applied at the anatomical points of maximal pain and tenderness in agreement with prophetic medicine ahadiths and our previous reports [8,23]. Interestingly, for treating such trauma-induced pain, if the sucking cups were not fit to the anatomical regions, Al-hijamah can be eased by adding honey to the cups margins to ease cups fitting. Combining oral intake of natural honey with Al-hijamah was strongly suggested by the author for treating many ailments and diseases conditions [24]. The success of Al-hijamah in treating painful conditions as autoimmune diseases (e.g. rheumatoid arthritis) [25] encourages us to suggest Al-hijamah as an adjuvant general line of treatment for sports injuries.

9. Conclusion

Al-hijamah (wet cupping therapy of prophetic medicine) is a strongly recommended adjuvant treatment for

long-term management of sports injuries. The use of Al-hijamah as a clearance and analgesic treatment following sports injuries is recommended.

10. Study Limitations

This study is limited by the number of patients being a single case study of only one patient. The author plans to do that in future studies God willing. Now, there is a limited number of patients to include in this study. However, this study is a "good beginning" to incorporate Al-hijamah medicine as a new promising adjuvant therapeutic tool for treating sports injuries particularly knee injuries.

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References

- [1] Witvrouw E, Werner S, Mikkelsen C, Van Tiggelen D, Vanden Berghe L and Cerulli G. Clinical classification of patellofemoral pain syndrome: guidelines for non-operative treatment. *Knee Surgery, Sports Traumatology, Arthroscopy* 2005; 13: 122-130.
- [2] Sanchis-Alfonso V. Holistic approach to understanding anterior knee pain. Clinical implications. *Knee Surgery, Sports Traumatology, Arthroscopy* 2014; 22: 2275-2285.
- [3] Houghton KM. Review for the generalist: evaluation of anterior knee pain. *Pediatric Rheumatology* 2007; 5: 1-10.
- [4] Smith TO, McNamara I and Donell ST. The contemporary management of anterior knee pain and patellofemoral instability. *The Knee* 2013; 20: S3-S15.
- [5] El Sayed SM, Abou-Taleb A, Mahmoud HS, Baghdadi H, Maria RA, Ahmed NS and Nabo MMH. Percutaneous excretion of iron and ferritin (through Al-hijamah) as a novel treatment for iron overload in beta-thalassemia major, hemochromatosis and sideroblastic anemia. *Medical hypotheses* 2014; 83: 238-246.
- [6] Sayed E, Mahmoud H and Nabo M. Medical and scientific bases of wet cupping therapy (Al-hijamah): In light of modern medicine and prophetic medicine. *Alternative & Integrative Medicine* 2013; 1-16.
- [7] El Sayed SM, Mahmoud HS and Nabo MMH. Methods of wet cupping therapy (Al-Hijamah): in light of modern medicine and prophetic medicine. *Alternative & Integrative Medicine* 2013; 1-16.
- [8] El Sayed SM, Al-quliti A-S, Mahmoud HS, Baghdadi H, Maria RA, Nabo MMH and Hefny A. Therapeutic benefits of Al-hijamah: in light of modern medicine and prophetic medicine. *American Journal of Medical and Biological Research* 2014; 2: 46-71.
- [9] Kannus P and Järvinen M. Nonoperative treatment of acute knee ligament injuries: a review with special reference to indications and methods. *Sports Medicine* 1990; 9: 244-260.
- [10] Hassan SMA, Aboonq MS, Albadawi EA, Aljehani Y, Abdel-Latif HM, Mariah RA, Shafik NM, Soliman TM, Abdel-Gawad AR and Omran FM. The Preventive and Therapeutic Effects of

- Ajwa Date Fruit Extract Against Acute Diclofenac Toxicity-Induced Colopathy: An Experimental Study. *Drug Design, Development and Therapy* 2022; 16: 2601.
- [11] Tian H, Tian Y-J, Wang B, Yang L, Wang Y-Y and Yang J-S. Impacts of bleeding and cupping therapy on serum P substance in patients of postherpetic neuralgia. *Zhongguo Zhen Jiu= Chinese Acupuncture & Moxibustion* 2013; 33: 678-681.
- [12] Ekrami N, Ahmadian M, Nourshahi M, Shakouri G H. Wet-cupping induces anti-inflammatory action in response to vigorous exercise among martial arts athletes: A pilot study. *Complement Ther Med.* 2021 Jan; 56: 102611.
- [13] Subadi I, Nugraha B, Laswati H and Josomuljono H. Pain relief with wet cupping therapy in rats is mediated by heat shock protein 70 and ss-endorphin. *Iranian Journal of Medical Sciences* 2017; 42: 384.
- [14] Ersoy S and Benli AR. Continue or stop applying wet cupping therapy (al-hijamah) in migraine headache: A randomized controlled trial. *Complementary therapies in clinical practice* 2020; 38: 101065.
- [15] El-Shanshory M, Hablas NM, Shebl Y, Fakhreldin AR, Attia M, Almaramhy HH, Baghdadi H, Ayat M, Albeihany A and El-Dardear A. Al-hijamah (wet cupping therapy of prophetic medicine) significantly and safely reduces iron overload and oxidative stress in thalassemic children: a novel pilot study. *Journal of Blood Medicine* 2018; 9: 241.
- [16] El-Shanshory M, Hablas NM, Shebel Y, Alhadramy O, El-Tahlawi R, Aboonq MS, Soliman TM, Abdel-Gawad AR, El Sayed SM and Abdallah HI. Al-hijamah (the triple S treatment of prophetic medicine) exerts cardioprotective, tissue-protective and immune potentiating effects in thalassemic children: a pilot clinical trial. *American Journal of Blood Research* 2020; 10: 447.
- [17] El-Shanshory M, Hablas NM, El-Tahlawi R, Awany S, Aboonq MS, Al Jaouni SK, Abdel-Latif TM, Abdel-Gawad AR, Okashah AM and Fakhreldin AR. Al-hijamah (the triple S treatment of prophetic medicine) significantly increases CD4/CD8 ratio in thalassemic patients via increasing TAC/MDA ratio: a clinical trial. *American Journal of Blood Research* 2022; 12: 125.
- [18] Aboonq MS. Al-hijamah (wet cupping therapy of prophetic medicine) as a novel alternative to surgery for carpal tunnel syndrome. *Neurosciences Journal* 2019; 24: 137-141.
- [19] Hudes K. Two cases of medial knee pain involving the medial coronary ligament in adolescents treated with conservative rehabilitation therapy. *The Journal of the Canadian Chiropractic Association* 2011; 55: 120.
- [20] Salter RB. *Textbook of disorders and injuries of the musculoskeletal system: An introduction to orthopaedics, fractures, and joint injuries, rheumatology, metabolic bone disease, and rehabilitation.* Lippincott Williams & Wilkins, 1999.
- [21] Reider B. Medial collateral ligament injuries in athletes. *Sports Medicine* 1996; 21: 147-156.
- [22] Edson CJ. Conservative and postoperative rehabilitation of isolated and combined injuries of the medial collateral ligament. *Sports medicine and arthroscopy review* 2006; 14: 105-110.
- [23] Mahmoud HS, Abou-El-Naga M, Omar NAA, El-Ghazzawy HA, Fathy YM, Nabo MMH and El Sayed SM. Anatomical sites for practicing wet cupping therapy (Al-Hijamah): in light of modern medicine and prophetic medicine. *Altern Integ Med* 2013; 2: 1-30.
- [24] El Sayed SM, Baghdadi H, Abou-Taleb A, Mahmoud HS, Maria RA, Ahmed NS and Nabo MMH. Al-hijamah and oral honey for treating thalassemia, conditions of iron overload, and hyperferremia: toward improving the therapeutic outcomes. *Journal of blood medicine* 2014; 5: 219.
- [25] Baghdadi H, Abdel-Aziz N, Ahmed NS, Mahmoud HS, Barghash A, Nasrat A, Nabo MMH and El Sayed SM. Ameliorating role exerted by Al-Hijamah in autoimmune diseases: effect on serum autoantibodies and inflammatory mediators. *International journal of health sciences* 2015; 9: 207.

