

The Hui Medicine Application in Rapid Rehabilitation after Orthopedic Surgery: An Overview

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Abstract

Orthopedic surgeries often require a long recovery period, but Hui medicine offers promising strategies for rapid rehabilitation. This paper explores the integration of Hui medicine into postoperative care, focusing on herbal remedies, physical therapies, and dietary adjustments. It uses a variety of methods, such as pasting, Tazi, acupuncture, diet therapy, medicine therapy, etc., to provide comprehensive treatment for various bone diseases. In the field of Hui medicine, through in-depth research and clinical verification, more therapies and drugs with unique curative effects have been discovered. Orthopedic rehabilitation and fumigation therapy play an important role in the rehabilitation stage of the disease, helping patients recover limb function, reduce pain, and improve quality of life. This paper elaborates on the spread and influence of Islamic Arab medical civilization in China and introduces the outstanding achievements of Hui medicine department and Hui medicine as important branches of this medical system. Through the in-depth study of relevant literature and historical data, the brilliant achievements of Hui medicine in inheritance and innovation are further revealed. In addition, the article also discusses the combination of modern science, technology, and traditional medicine--which has injected new vitality into the development of traditional medicine. Hui medicine, with its unique theoretical system and therapeutic methods, offers promising approaches to enhance the recovery process. Rehabilitation, acupuncture and fumigation treatment are typical representatives of the

Sinicization of Islamic Arab medical civilization, and have made important contributions to the development of traditional Chinese medicine. At the same time, the rich experience and unique therapy of Hui medicine provide useful reference and inspiration for modern medicine. This paper overviews the effectiveness of Hui medicine in promoting rapid rehabilitation after orthopedic surgery.

Keywords

Islamic Arabic Medicine, Tianfang Orthopedics, Hui Medicine, Fumigation, Rehabilitation

1. The Origin of Orthopedic Hui Medicine

Due to the relatively slow repair of bone injuries [1], the ancients had “100 days of injury” (clinical healing of fractures generally takes 3 - 6 months) [2] [3], thus, the normal movement of the affected limb is limited, the muscle is shortened before use, calcium loss, tendon contracture, joint stiffness, and severe cases lead to disability [2] [3]. Due to the rapid development of medical science, this concept is changing. Based on modern medicine’s “accelerated rehabilitation” concept, the surgical process, the optimization of postoperative nursing operations was implemented to reduce intraoperative trauma or related stress reactions, shortening the postoperative rehabilitation time of patients, and enabling them to recover quickly [4]. In orthopedic rehabilitation, medicine plays a crucial role. It combines advanced techniques and therapies to help patients regain mobility and strength.

The traditional treatment and rehabilitation methods of Hui medicine, especially the “Tianfang Orthopedics” of Hui medicine have obvious advantages for the rehabilitation of bone diseases in the practice of thousands of years. Tianfang “(Heaven)” refers to the Arab region [5] [6]. “History of the Ming Dynasty, Biography of the Western Regions” reported that “in the fifth year of Xuande, When Zheng He’s ships explored overseas, Wen Guri sent men to Tianfang” [5]-[7]. The source of “Tianfang” is recorded in Huang Sheng’s Western Tributary Records in the Ming Dynasty: “Tianfang is Mecca, one of Islam’s holiest cities” [8].

The Tang Dynasty called the Arab region “Dashi”, which was influenced by Persian and ancient Syriac. There are White clothing (Umayyad or Umayyad dynasty) Black clothing (Apos dynasty), green clothing (Fatimid dynasty) [6] [7]. Islamic Arab medicine was once the most advanced medicine in the world, especially during the rapid expansion of the Arab Empire in the Middle Ages. The four Hafas took advantage of the translation movement lasting more than 200 years, and the integration ancient Greek, ancient Roman, ancient Indian and ancient Chinese medicine into ancient Arab created an excellent traditional Islamic Arab medical system [6] [7].

Avicenna, one of the world’s three recognized medical Kings (Hippocrates, Galen, Avicenna), wrote the Canon of Medicine, which has been a Western medical

textbook for more than 600 years, and is still the most translated medical book in the world. Avicenna was a renowned medieval physician. His works on medicine had a profound impact, covering various aspects of healthcare [6] [7].

Avicenna's "Medical Norms", "Rehabilitation Series" and other works, discussed the clinical experiment, experimental medicine, infectious diseases and other advanced medical ideas. They also established a system of anatomy, physiology, ophthalmology, orthopedics, pharmacology, pharmacy, surgery, pharmaceutical, and even orthopedics separated from spinal surgery. In his writings, Avicenna provided detailed illustrations of external fixation and traction for people with spinal injuries. Medieval Arabic medicine had a significant impact on world medicine. It preserved and advanced the knowledge of ancient civilizations. Scholars like Avicenna made important contributions with their comprehensive medical texts, influencing European medicine and beyond [5]-[7].

Hui medicine is an important cultural heritage of China's ancient Silk Road. It is the crystallization of the successful integration of traditional Chinese and Western medicine in early ancient China, an important achievement of Han and Hui national unity inherited from ancient times, and a typical representative of the Sinicization of Islamic Arab medical civilization [5] [6] [9].

Hui Medicine is a traditional medicine that introduced Islamic and Arab medicine into China through the Silk Road and combined it with the ancient Han medicine at that time [5] [9]. Classic works are: *Sea Medicine Materia Medica* in the late Tang Dynasty. *Hui Prescription*, a great work of Hui medicine in the Mongolian Yuan Dynasty, is related to the inheritance of Razi's *Universal Medical Canon*, Ibn Sina's *Medical Canon* and Mehusi's *Medical Art Complete Book*, which proves that the *Thirteen Books of Thebi Medical Canon* were introduced into China in the Mongolian Yuan Dynasty. During the Mongol Yuan Dynasty, the *Ruizhutang Experience Recipe* and the *Yinshan Decoction* were written by Shatumusu—a returning doctor—and Hu Sihui—a royal physician [5] [6].

The basic theory of Hui medicine includes: True one, vitality, Yin and Yang; Seven lines, four yuan, Sanzi (three children); Four body fluids (red, white, yellow, black); Four parts (four parts and seven diseases of human body) [5] [9].

Tang Dynasty Sun Simiao's "Qianjin Prescription", "Qianjin Yi Fang" and Wang Tao "Secret to Waitai" have received Arab, Persian orthopedic disease prescriptions [5].

During the Southern and Northern Dynasties of China, wars were frequent, and the specialty of orthopedics developed rapidly. After the establishment of the Yuan Dynasty, Arab medicine entered the Central Plains. Aixue, a famous Persian Arab medical doctor, served as the royal doctor of Kublai Khan in the Yuan Dynasty, established the Capital Medical Institute in the imperial city, and built the Guanghui Division throughout the country, which was an institution of medical administration, research, diagnosis and treatment, forming a network system of medical theory and practice [5] [6].

At this time, the traumatology department of traditional Chinese medicine

absorbed a lot of Arab medical experience. Wei Yilin, a famous doctor in the Yuan Dynasty, constantly sought teachers and visited friends, including famous Arab doctors and royal doctors in China. Later, he wrote “The Medicine of the World” reflecting the main achievements of orthopedics before the Yuan Dynasty, which is one of the highest levels of early orthopedic monographs in ancient China [5] [6].

Application advantage of Hui medicine in orthopedic postoperative rehabilitation

According to Traditional Hui Medicine, orthopedic diseases are prone to deficiency of Qi and blood after surgery. If not corrected in time, complications such as postoperative infection, wound non-healing and venous thrombosis of lower limbs may occur [10] [11].

Hui medicine follows the academic thinking of “blood as the base, Qi as the movement” and is transformed into Shenqi Heti decoction [5] [6] [10].

Hui Medicine of Shenqi Heti Decoction which including Ginseng, Astragalus, Chinese rhizome, Baizhu, Poria cocos, Paeony, psoralen, raw ground, Yuan Hu, Chuanxiong, Peach kernel, interrupted, Fructus aurantii, white Cardamom, Platycodon, sand kernel, Grilled licorice, and stevia. Starting from the second day after surgery, one dose per day, decocted in water, divided in the morning and evening [5] [6] [12]-[14].

The whole formula has the effect of beneficial Qi, invigorating Qi and blood, relieving pain, active fluid, vitality, reinforcing bone and strengthening tendons, improving immunity, promoting postoperative healing after injury and reducing postoperative complications [5] [6] [12]-[14].

It is necessary to have scientific nutrition support after orthopedic disease, and pay attention to nutrition management in the perioperative period [15] [16]. According to modern medical science, insufficient protein intake during nutrition management can cause “deficiency” (malnutrition), affecting the body’s rehabilitation. Hui Medicine treatment to give Piwei (spleen and stomach) tonifying drugs, while with high quality high-protein diet, tonifying Yang essence Qi. Empirical formula: Food aid formula 1.

Most patients with orthopedic diseases after surgery have varying degrees of sleep disorders (pain, pressure, tension), which is not conducive to rehabilitation [17] [18].

In addition to Western medicine’s sedative sleeping pills, Traditional Chinese Medicine and Hui medicine are both effective for sleep disorders and can be selected in a variety of ways, according to different syndromes: Qi stagnation and blood deficiency, kidney Yang deficiency and kidney Yin deficiency, etc., to give the correct Traditional Chinese Medicine and Hui medicine decoction and ointment treatment. Examples include regulating Qi and Yangshen Decoction, Anmei regulating liver soup, regulating god and nourishing Yin decoction, and flavoured calamus sleep balm (**Figure 1(A)** and **Figure 1(B)**).

Orthopedic disease postoperative recovery is relatively slow, due to the longer



Figure 1. Shows the Hui ointment formula. Panel A is glass jar, panel B is blue and white porcelain can.

duration of pain, long-term adverse effects, will increase patients' anxiety, irritability, depression, even refuse to cooperate and other negative emotions, need timely treatment, including postoperative analgesia pump [19] [20]. At present, the combination of Chinese and western comprehensive intervention can achieve good results.

There were Acupoint acupuncture [21], massage [22] [23], ear point pressure bean, external application of traditional Chinese medicine, moxibustion, Chinese medicine decoction, etc. In postoperative analgesia, Qi-stagnation and blood-stasis are the dialectics of back medicine. Prescription: Tongluo Jieyu Decoction which included: Radix Dazhi, blood exhaustion, intermittent, Zeilan, Poria, Radix Paeonia, Radix Angica, Shud, Magnolia, Dilong, Chuanxiong, Frankincense, Xiangxiang, Myrr, Noqi, Licorice, Cassia, Stevia. On the second day after surgery, one dose per day was divided into two doses for 5 days.

The effect of Tongluo for relieving pain, tonifying Qi to stop bleeding, promoting blood circulation and removing stasis, reducing swelling and generating muscle. The predisposition to anemia after orthopedic disease [24] [25], and the risk of deep vein thrombosis [26] [27], requires attention to blood management.

Postoperative anemia mainly occurs in patients with massive bleeding and elderly patients before surgery [28]. In addition to Western medicine treatment such as blood transfusion and iron supplementation, middle-return drugs such as Shuangjiao Qixiang blood-supplementing decoction can be given. Ingredients include Angelica, Astragalus, red date, ginger, cinnamon, Agarwood, frankincense, Xylocarp, licorice, Crane grass, Angelica, white cardamom, amomum, ejiao, antler-horn gum. For 15 days after the surgery take one dose daily.

Reconstituted blood ointment can be taken for anemia after surgery. Huiyijing prescription: Quyu Tongluo prescription.

Postoperative deep vein thrombosis, is a major concern according to the expert consensus and guidelines of the standardized drug use.

Chinese medicine believes that deep vein thrombosis belongs to the category of "blood stasis". The cause of the disease is that the movement of Qi and blood are not smooth: the vein is blocked; the blood flow is blocked; and the blood stasis of

Qi is stagnant. In the early stage, it was mostly damp-heat, and in the later stage, it was dampness of Qi and blood.

Prescription of Hui medicine ointment: Tonifying Qi and regulating fluid and unblocking collaterals cream. Prescription of Huiyijing: Prescription for expelling stasis and unblocking collaterals.

Modern medicine believes that early effective rehabilitation management (rehabilitation training) is conducive to the rehabilitation of orthopedic diseases after surgery.

Chinese doctors believe that the stiffness of limbs and joints after orthopedic diseases is related to a variety of factors, such as surgical trauma, Qi stagnation and blood stasis, muscle and bone injury, and the invasion of wind-cold and dampness pathogens. This leads to poor blood flow in the lesion area, which results in limited activity and function.

According to the patient's own situation, the actual treatment can vary. To enable them to recover quickly.

In the initial stage of operation, it is essential to combine work and rest, alternate between rest and activity, adopt a combination of internal and external treatment methods, and apply drugs for supplementing Qi and facilitating the flow of Qi. Buyang Huanwu decoction can be used to add or reduce. The ingredients are Astragalus, Taoren, Safflower, Chuanxiong, Angelica, Red Peony, Dilong, Baizhi, Guizhi, and Licorice. Take one dose daily for five days. It can promote the smooth progress of early training. Other methods include ear acupuncture and Chinese medicine fumigation

2. The Recovery of Patients Can Be Accelerated by Light Rehabilitation after Operation

Hui medicine has the advantage of being low cost, with few side effects and is effective for light rehabilitation after surgery for orthopedic diseases [5].

Wrist and ankle acupuncture

It is a kind of acupuncture method using points from the wrist and ankle to fix and treat diseases with long needle hypodermic acupuncture [29] [30].

Take three equidistant shallow intradermic prickles from each wrist and ankle, point upward, and fix the needle with adhesive tape on the head of the needle, which can relieve pain, promote Qi and blood circulation, promote health and dispel evil, harmonize Yin and Yang, and activate the body's endogenous system. This relieves pain, removes swelling and promotes rapid recovery. Acupuncture has scientific basis in stimulating specific points to regulate body's energy flow. Acupuncture has shown potential in pain relief and promoting healing.

Ear point pressure bean (Figure 2(A))

It is adhered to specific auricular points with the method of "Wang not leaving the line", and moderate kneading, pressing, kneading, and pressing are performed, so that it can generate stimulation induction such as acid, numbness, swelling, and pain, thereby achieving the purpose of treatment and promoting

rehabilitation. In particular, it has a good effect on postoperative sleep disorders [31].

Evodia salt therapy and ironing method (Figure 2(B))

The *Cornus officinis* is put into a cloth bag of green salt particles and applied to the affected area after being microwaved, so that the medicinal properties could be introduced into the lesion and the purpose of treatment could be achieved [32].

Evodia has the advantages of dispelling cold and relieving pain, helping Yang to stop diarrhea, reducing regress to stop vomiting, strengthening spleen and kidney [33]. Hot compress navel and Yongquan point is conducive to rapid recovery after surgery [33]. Put 30 g of Evodia in 100 g salt bag, heat and apply to affected area.

Hui Sizi loose application (Figure 2(C))

Use white mustard seed, *Evocus officinalis*, Perilla seed, and radish seed in equal amounts. Grind the mixture into a fine powder to use as a paste.

Efficacy: It has the functions of eliminating wind and dampness, warming and dredging the channels, dispelling cold, and clearing the collaterals to relieve pain. Indications: It is applicable to postoperative pain, pain in the neck and shoulders, pain in the waist and legs, knee joint pain, and other conditions.

Traditional Chinese medicine fumigation

Boil and fumigate traditional Chinese medicine into soup. This integrates various therapeutic functions such as medicine therapy, heat therapy, gas therapy, transdermal and penetration into one body. It makes use of the dual effect of physical heat and medicine, and allows the drug force to be absorbed through the skin through the transpiration effect of traditional Chinese medical steam on the body. To achieve internal and external treatment, from the surface through the inside, relax the tendons, Tongluo, warming the channel to dissipate cold, promoting blood circulation and pain, accelerate the postoperative rehabilitation of patients [34] [35]. Fumigation may work by allowing medicinal substances to be absorbed through the skin and respiratory tract. This method has shown potential in pain relief and promoting healing.

Chinese fumigation agreement prescription: a variety of Dazi. There are corresponding fumigation prescriptions for orthopedic diseases, gynecological inflammatory diseases, skin diseases, prostate hyperplasia and other urological diseases [5].

Benefits of Chinese medicine fumigation: fumigation is equivalent to:

- 2 hours of aerobic exercise.
- 50 minutes lymphatic detoxification.
- 300 minutes of aerobic chest protection exercise.
- 30 minutes of whole-body meridian massage.
- 2 hours of yoga exercise.
- jogging 10 kilometers fat burning.
- 3 times the whole body whitening and moisturizing.
- a thorough internal cleaning.

- 10 basic facial treatments.

Notes for fumigation:

- fumigation temperature control should be 38°C - 42°C.
- half an hour is the maximum time.
- stop the fumigation process if it causes discomfort.
- The following can be appropriately carried out for fumigation: drinking water can be taken appropriately; for the elderly and children, special escorts should be provided.
- Keep warm after fumigation.

Tazi method (Figure 2(D))

Tazi method is a combination of Ta and Zi (soaking) two medical treatment methods. Ta is full of medicinal liquid gauze or cotton wool applied to the affected area is soaked in medicinal liquid, the former is equivalent to the commonly used wet compress method, because the two methods are often carried out at the same time; Therefore, the two methods are called Tazi method [36].



Figure 2. Shows some traditional Hui medical therapies. Panel A is Ear point pressure bean; panel B is Evodia salt therapy and ironing method; panel C is Hui Sizi loose application; panel D is Tazi method.

3. Conclusion

The application of Hui medicine in the accelerated rehabilitation of orthopedic diseases after surgery aims to help postoperative patients improve adverse factors through relevant Chinese Hui medicine treatment and light rehabilitation technology, and accelerate postoperative rehabilitation of patients through comprehensive management mode, so that they can quickly recover health and normal

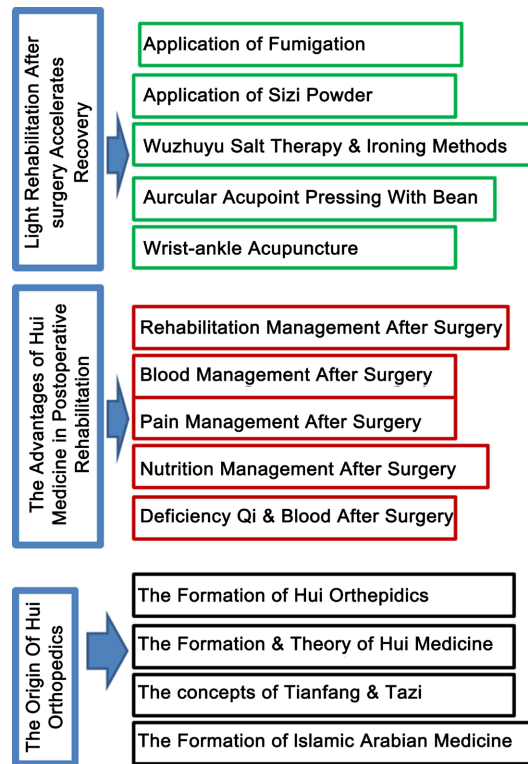


Figure 3. Overview the Hui medicine application in rapid rehabilitation after orthopedic surgery.

activity ability under the integrated management of Chinese and Western combination, so as to provide patients with high quality of life and create happiness (as shown in **Figure 3**) [5]-[7] [9] [12].

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Authors' Contributions

Junming Luo, Guanghui Zhang and Jianqing Zhang designed the research; Hailong Jiang, Qilong Tan, Xiaolin Wang, Jian Ma, Wei Lin and Faxiang Ye collected data and performed analysis; Junming Luo, Hailong Jiang and Jianqing Zhang wrote the paper. Xiaolin Wang, Wei Lin and Qilong Tan critically reviewed the manuscript content.

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Conflicts of Interest

The authors have no conflict of interest to disclose.

References

- [1] Pache, S., Aman, Z.S., Kennedy, M., *et al.* (2018) Meniscal Root Tears: Current Concepts Review. *The Archives of Bone and Joint Surgery*, **6**, 250-259.
- [2] Einhorn, T.A. and Gerstenfeld, L.C. (2014) Fracture Healing: Mechanisms and Interventions. *Nature Reviews Rheumatology*, **11**, 45-54. <https://doi.org/10.1038/nrrheum.2014.164>
- [3] Fisher, J.S., Kazam, J.J., Fufa, D. and Bartolotta, R.J. (2018) Radiologic Evaluation of Fracture Healing. *Skeletal Radiology*, **48**, 349-361. <https://doi.org/10.1007/s00256-018-3051-0>
- [4] Roddy, E., DeBaun, M.R., Daoud-Gray, A., Yang, Y.P. and Gardner, M.J. (2017) Treatment of Critical-Sized Bone Defects: Clinical and Tissue Engineering Perspectives. *European Journal of Orthopaedic Surgery & Traumatology*, **28**, 351-362. <https://doi.org/10.1007/s00590-017-2063-0>
- [5] Zhang, J., Lu, L., Cai, Y., Luo, B. and Luo, J. (2023) Hui Medicine: The Sinicized Philosophical Islamic Medical System. *Open Journal of Philosophy*, **13**, 278-301. <https://doi.org/10.4236/ojpp.2023.132019>
- [6] Zhang, J.Q. (2018) Practical Chinese Hui Medicine. China Ancient Books Publishing house.
- [7] Shan, Y. (2005) A Brief History of Hui Medicine. Ningxia People's Publishing House.
- [8] Hitti, P. (2008) General Arab History. New World Press.
- [9] Zhang, J., Lu, L., Tan, Q., Wang, X., Ma, H., Li, C., *et al.* (2023) Hui Medicine Practice in Qinghai Kangle Hospital during the Period of COVID-19. *Open Journal of Philosophy*, **13**, 811-818. <https://doi.org/10.4236/ojpp.2023.134054>
- [10] Jiang, H. (2017) Incidence of Spontaneous Resorption of Lumbar Disc Herniation: A Meta-Analysis. *Pain Physician*, **1**, E45-E52. <https://doi.org/10.36076/ppj.2017.1.e45>
- [11] Ma, Y., Zhou, K., Fan, J. and Sun, S. (2016) Traditional Chinese Medicine: Potential Approaches from Modern Dynamical Complexity Theories. *Frontiers of Medicine*, **10**, 28-32. <https://doi.org/10.1007/s11684-016-0434-2>
- [12] Ma, C.Y. and Chen, W.C. (2005) Chinese Hui Medicine. Ningxia People's Publishing house.
- [13] Duan, C.S. and Youyang, Z.Z. (1981) Hui Medicine. Zhonghua Book Company.
- [14] Shan, Y.D. (2005) The Profound Meaning of Hui Medicine. Ningxia People's Publishing House.
- [15] Robinson, S.M., Reginster, J.Y., Rizzoli, R., Shaw, S.C., Kanis, J.A., Bautmans, I., *et al.* (2018) Does Nutrition Play a Role in the Prevention and Management of Sarcopenia? *Clinical Nutrition*, **37**, 1121-1132. <https://doi.org/10.1016/j.clnu.2017.08.016>
- [16] Mercuri, E., Finkel, R.S., Muntoni, F., Wirth, B., Montes, J., Main, M., *et al.* (2018) Diagnosis and Management of Spinal Muscular Atrophy: Part 1: Recommendations for Diagnosis, Rehabilitation, Orthopedic and Nutritional Care. *Neuromuscular Disorders*, **28**, 103-115. <https://doi.org/10.1016/j.nmd.2017.11.005>
- [17] Yang, H., Liu, Y., Ye, J., Zhao, L., Li, L. and Hou, X. (2021) Evaluation of Sleep Disorder in Orthopedic Trauma Patients: A Retrospective Analysis of 1129 Cases. *Journal of Orthopaedic Surgery and Research*, **16**, Article No. 344. <https://doi.org/10.1186/s13018-021-02487-2>
- [18] Ni, J., Zhou, W., Cen, H., Chen, G., Huang, J., Yin, K., *et al.* (2022) Evidence for Causal Effects of Sleep Disturbances on Risk for Osteoarthritis: A Univariable and Multivariable Mendelian Randomization Study. *Osteoarthritis and Cartilage*, **30**,

- 443-450. <https://doi.org/10.1016/j.joca.2021.11.021>
- [19] Mooney, N.E. (1991) Pain Management in the Orthopedic Patient. *Nursing Clinics of North America*, **26**, 73-87. [https://doi.org/10.1016/s0029-6465\(22\)03007-9](https://doi.org/10.1016/s0029-6465(22)03007-9)
- [20] Roberts, M., Brodribb, W. and Mitchell, G. (2012) Reducing the Pain: A Systematic Review of Postdischarge Analgesia Following Elective Orthopedic Surgery. *Pain Medicine*, **13**, 711-727. <https://doi.org/10.1111/j.1526-4637.2012.01359.x>
- [21] Yuan, Q., Wang, P., Liu, L., Sun, F., Cai, Y., Wu, W., *et al.* (2016) Acupuncture for Musculoskeletal Pain: A Meta-Analysis and Meta-Regression of Sham-Controlled Randomized Clinical Trials. *Scientific Reports*, **6**, Article No. 30675. <https://doi.org/10.1038/srep30675>
- [22] Loew, L.M., Brosseau, L., Tugwell, P., Wells, G.A., Welch, V., Shea, B., *et al.* (2014) Deep Transverse Friction Massage for Treating Lateral Elbow or Lateral Knee Tendinitis. *Cochrane Database of Systematic Reviews*, No. 11, CD003528. <https://doi.org/10.1002/14651858.cd003528.pub2>
- [23] Liu, C., Chen, X. and Wu, S. (2022) The Effect of Massage Therapy on Pain after Surgery: A Comprehensive Meta-Analysis. *Complementary Therapies in Medicine*, **71**, Article 102892. <https://doi.org/10.1016/j.ctim.2022.102892>
- [24] Steuber, T.D., Howard, M.L. and Nisly, S.A. (2016) Strategies for the Management of Postoperative Anemia in Elective Orthopedic Surgery. *Annals of Pharmacotherapy*, **50**, 578-585. <https://doi.org/10.1177/1060028016647977>
- [25] Sachdeva, I. and Carmouche, J.J. (2020) Postoperative Anemia Predicts Length of Stay for Geriatric Patients Undergoing Minimally Invasive Lumbar Spine Fusion Surgery. *Geriatric Orthopaedic Surgery & Rehabilitation*, **11**. <https://doi.org/10.1177/2151459320911874>
- [26] Lin, H., Lin, C., Huang, Y., Hsieh, H., Yang, Y., Chang, I., *et al.* (2022) Deep Vein Thrombosis after Major Orthopedic Surgery in Taiwan Region: A Prospective Cross-Sectional Study and Literature Review. *Journal of the Formosan Medical Association*, **121**, 1541-1549. <https://doi.org/10.1016/j.jfma.2021.12.027>
- [27] Calfon, M., Seddighzadeh, A., Piazza, G. and Goldhaber, S.Z. (2009) Deep Vein Thrombosis in Orthopedic Surgery. *Clinical and Applied Thrombosis/Hemostasis*, **15**, 512-516. <https://doi.org/10.1177/1076029608330471>
- [28] Tang, H., Hosein, A. and Mattioli-Belmonte, M. (2021) Traditional Chinese Medicine and Orthopedic Biomaterials: Host of Opportunities from Herbal Extracts. *Materials Science and Engineering: C*, **120**, Article 111760. <https://doi.org/10.1016/j.msec.2020.111760>
- [29] Xu, N., Liu, L. and Rong, W. (2022) Wrist-Ankle Acupuncture as Additional Therapy for Postoperative Multimodal Analgesia in Orthopedic Surgery: Systematic Review and Meta-Analysis. *Pain Medicine*, **23**, 1654-1669. <https://doi.org/10.1093/pm/pnac065>
- [30] Chen, M., Xu, Y., Fu, X., Xie, J., Cao, X. and Xu, Y. (2023) Wrist-Ankle Acupuncture for the Treatment of Acute Orthopedic Pain after Surgery: A Meta-Analysis. *Journal of Orthopaedic Surgery and Research*, **18**, Article No. 106. <https://doi.org/10.1186/s13018-023-03569-z>
- [31] Varallo, G., Giusti, E.M., Manna, C., Castelnuovo, G., Pizza, F., Franceschini, C., *et al.* (2022) Sleep Disturbances and Sleep Disorders as Risk Factors for Chronic Postsurgical Pain: A Systematic Review and Meta-Analysis. *Sleep Medicine Reviews*, **63**, Article 101630. <https://doi.org/10.1016/j.smrv.2022.101630>
- [32] Chen, Z., Cao, L., Wen, Z., *et al.* (2015) Study of Evodia Hot Compress Plus Electro-

- Acupuncture in Patients Who Have Undergone Abdominal Surgery. *International Journal of Clinical and Experimental Medicine*, **8**, 16167-16174.
- [33] Wu, X., Yu, Y., Ying, L., Tan, W., Zhan, X. and Wang, L. (2018) Hot Compress with Chinese Herbal Salt Packets Reducing PICC Catheter Complications: A Randomized Controlled Trial. *Chinese Journal of Integrative Medicine*, **24**, 809-814. <https://doi.org/10.1007/s11655-018-2913-y>
- [34] Zeng, W., Mao, H., Zhou, G., Wu, K., Liao, X., Yun, L., *et al.* (2021) The Effect of Traditional Chinese Medicine Fumigation and Washing as a Complementary and Alternative Therapy on the Recovery of Joint Function after Development Dysplasia of the Hip in Children: A Protocol for Systematic Review and Meta-Analysis. *Medicine*, **100**, e25686. <https://doi.org/10.1097/md.00000000000025686>
- [35] Contrast Media & Molecular Imaging (2023) Retracted: Study on Intelligent Traditional Chinese Medicine Fumigation for Treating Lumbar Intervertebral Disc Herniation Based on Medical Big Data Mining. *Contrast Media & Molecular Imaging*, **2023**, Article 9804359. <https://doi.org/10.1155/2023/9804359>
- [36] Tazi, I., Nafil, H. and Mahmal, L. (2013) Cupping Therapy and Palliative Care: What about Hematologic Malignancies? *Journal of Acupuncture and Meridian Studies*, **6**, 179. <https://doi.org/10.1016/j.jams.2013.05.002>