

IMPACT OF CERVICAL SPONDYLOSIS ON QUALITY OF LIFE AND ITS
MANAGEMENT THROUGH UNANI SYSTEM OF MEDICINE: A REVIEWSaima Sharfuddin^{1*}, Ehsan Ahmad², S. M. Abbas Zaidi³, Madiha Akhtar⁴ and Tazeen Naved⁵^{1,5}M.D Scholar, Dept. of Ilaj Bit Tadbeer, H.S.Z.H Government Unani Medical College Bhopal.²Asst. Professor, Dept. of Ilaj Bit Tadbeer, H.S.Z.H Government Unani Medical College Bhopal.³Asst. Professor, Dept. of Moalajat, H.S.Z.H Government Unani Medical College Bhopal.⁴M.D Scholar, Dept. of Amraz e Jild wa Tazeeniyat, H.S.Z.H Government Unani Medical College Bhopal.

*Corresponding Author: Dr. Saima Sharfuddin

M.D Scholar, Dept. of Ilaj Bit Tadbeer, H.S.Z.H Government Unani Medical College Bhopal.

Article Received on 22/07/2024

Article Revised on 12/08/2024

Article Accepted on 02/09/2024

ABSTRACT

In *Unani* system of medicine, Cervical Spondylosis is described under a broad term *Waja-ul-Mafasil* which includes entire joint disorders like inflammatory, non-inflammatory, infectious, metabolic and other musculoskeletal disorders and it can be correlated with various types of *Waja-ul-Mafasil* in resemblance to the predisposing factors, aggravating factors and pattern of joint involvement. Cervical spondylosis is a degenerative disease of intervertebral discs and adjacent vertebral bodies of the cervical region due to wear and tear changes. Due to the limited efficacy of conventional treatment and potential side effects of long-term use, and its impact on physical, social, mental wellbeing of a person, patients seek alternative treatment options. *Unani* physicians described the management of various joint disorders with the help of several *tadabeer*. The aim and objectives of this literature review is to address the level of evidence of *Unani* physicians and clinical studies conducted on the efficacy of various Regimenal modalities in the management of joint pain with *Unani* treatment and determine the quality of life of patient. The following systematic literature review is conducted via searching data bases like google scholar, pubmed, science direct, medline. We also conducted review from data bases on the classical *Unani* text book available in HSZH *Unani* medical college library Bhopal MP, India. Keeping in view of the unsatisfactory treatment option in conventional medicine, *Unani* medicine can play an important role through its various multidisciplinary approaches (e.g. Dietotherapy, Regimenal therapy and Pharmacotherapy) in managing cervical spondylosis.

1. INTRODUCTION

Cervical spondylosis is defined as the osteoarthritis in the cervical spine characterized by the degeneration of intervertebral disc and osteophyte formation.^[1] Symptoms of cervical spondylosis manifest as neck pain and neck stiffness and can be accompanied by radicular symptoms when there is compression of neural structures. Most of the individuals with cervical spondylosis with degenerative changes of the cervical spondylosis remain asymptomatic while the symptomatic patients are usually older than 40 years of age. There are three main symptoms related to cervical spondylosis: Neck pain, cervical myelopathy, cervical radiculopathy. Neck pain is the typical presentation of the patients of cervical degenerative disc disease while pain is the most prominent feature in acute cervical radiculopathy and diminishes as the condition becomes chronic. It may be described as sharp painful or burning and may be located in the neck, shoulder or arm depending on the nerve root involved.

The most frequently affected level are C5-C6 followed by C6-C7 and C4-C5.^[2] Most people with Degenerative changes of the cervical spine on radiographic imaging remain asymptomatic,^[3] with 25% of individuals under the age of 40, 50% of individuals over the age of 40, and 85% of individuals over the age of 60 showing sign of degeneration^[4] while Symptomatic most prominent feature as neck pain in general population. The prevalence of neck pain ranges from 0.4% to 41.5%, the 1-year incidence ranges from 4.8% to 79.5%, and lifetime prevalence may be as high as 86.8%. According to the Global Burden of Disease 2015, low back and neck pain remain the leading cause of years lived with disability (YLD).^{[5][6][7]}

The term *Waja-ul-Mafasil*, which includes a wide range of joint disorders such as inflammatory, non-inflammatory, infectious, metabolic, and other musculoskeletal conditions is used to describe cervical spondylosis in the *Unani* medical system. In Arabic the term *Waja* refers to pain, while *Mafasil* refers to joints.

This is a painful or inflammatory ailment where pain and inflammation are caused by an accumulation of *Mawade fasida* in the joints.^{[8][9]} The majority of *Unani* scholars have referred to joint pain under the general term *Waja-ul-Mafasil* naming them after the location of the pain such as *waja ur Rukba* (knee pain), *waja ul warik* (ischial pain), *Irqun-nisa* (sciatica), and *Niqris* (gout).^{[10][11]} In a similar way pain in the cervical vertebrae (*fuqrat-e-unuq*) is referred to as cervical spondylosis.

2. Impact of cervical spondylosis on quality of life

Cervical pain had a negative impact on the patient's physical and mental health. Also it imposes a significant negative impact on their well-being, personal life their families, and their societies. Inappropriate mechanical stress and aging are factors associated with developing cervical spondylosis. Common factors associated with spondylotic changes included age, occupational characteristics, trauma, and smoking.^[12] This disorder could induce aging because of underlying comorbidities and less physical activity.^[13] Patients may have improper posture for a certain period that leads to the development of cervical spondylosis. individuals with a depressed mood are at high risk of developing cervical spondylosis. The state of low mood can affect individual's sense of well-being, leading to poor health outcomes and quality of life.^[14,15] In working age group there are more muscle spasms accompanied by strains and sprains due to stress or poor posture. This causes myofascial pain which can be reversed with lifestyle changes.

Considering that the most common cause of neck pain in older adults is degenerative changes that are almost irreversible causing a person to have greater disability and a poor quality of life. Physical pain can be attributed to incorrect ergonomics and poor posture which cause changes in the biomechanics of the spine resulting in neck muscle weakness and scapular instability. It causes pain in the body and affects activities such as sleeping, reading, driving, carrying heavy objects, etc. This engagement in daily activities impairs a person's physical and social functioning, including progressive anxiety, fatigue and depression, leading to mental and psychosocial problems and physical pain.

2.1 Prevalance and Risk factors of neck pain

About two thirds of the population have neck pain at some time in their lives and prevalence is highest in middle age and it can affect people of all ages and backgrounds but certain factors may increase the risk of experiencing neck pain. Some of these factors include: Neck pain is more common in older adults particularly as they age and degenerative changes occur in the cervical spine such as cervical spondylosis or herniated discs. The risk of developing neck pain is higher in people whose jobs involve heavy lifting, poor posture, or repetitive neck movements. This includes office workers who spend long hours sitting at a desk as well as individuals in professions such as construction or healthcare. Maintaining poor posture, Lack of regular exercise and

physical activity can contribute to muscle weakness and stiffness in the neck increasing the likelihood of experiencing neck pain. Emotional stress and tension can cause muscle tension in the neck and shoulders, leading to pain and discomfort. Spending prolonged periods looking down at smartphones, tablets, or computers can strain the muscles and joints in the neck, resulting in pain and stiffness.

3. Aetiology of cervical spondylosis as per *unani* concept

According to *Ali Ibne Abbas Majusi* the etiology of *Waja-ul-Mafasil* is so complicated that it is not possible to identify the exact causative factor. According to *Ibne Sina*, the psychic factors play a prominent role in the causation of this disease, other factors which are responsible for the disease include hereditary & joint weakness etc. *Ibne Sina* categorized the etiology of *Waja-ul-Mafasil* into two types^[9,16] eg. *Asbabe fa'ilah* (Primary causes) and *Asbabe munfa'ilah* (secondary causes) while another *Unani* scholar *Ismail Jurjani* classified as "*Asbabe asli* or *Fai'lah*" and "*Asbabe aa'rzi*."^[8]

1) *Asbabe Asli* or *Fai'lah* (Primary cause)

- A. Generally *Tabiyat* of the joints suck the fluids whenever the level decreases. but when due to unnecessary motorized use of the joint occur an abnormal heat produced which burn the joint fluid this process is called (Dissolution) *Tahallul* and there is dryness produced.
- B. The Expulsive power of joint (*Quwwate dafea*) get weak resulting the Morbid matter (*Ghair tabai fuzlat*) get not evacuated which cause an another thing that all structure in a joint either capsule or tendon or cartilage or bony prominence are cold and dry then these cannot assimilate the abnormal fluid. So this fluid become cold and this create a type of pain.^[10]

According to *Unani* scholar *Samarqandi*, the *Madda* (substance) which is responsible for the cause of *Waja-ul-Mafasil* is of a very thick consistency and white in colour, whereas according to *Ibne Sina* this *Madda* almost resembles to pus (*Reem*). The humours responsible for the development of *Waja-ul-Mafasil* may be one or more of the following:

- ❖ *Waja-ul-Mafasil Balghami* is more common.
- ❖ *Waja-ul-Mafasil Damvi* is common.
- ❖ *Waja-ul-Mafasil Safravi* is less frequently encountered.
- ❖ *Waja-ul-Mafasil Saudavi* is rare.

2) *Asbabe munfa'ilah or Aa'rzi* (Secondary/ Predisposing factor)

These are the factors which indirectly affect the articular region and make the joints vulnerable to accept the morbid material with their subsequent accumulation that result in natural as well as functional changes of the joints. Lack of exercise, *Zoafe meda* (weakness of stomach), *Ghizae be aitadali* (improper diet in respect to time, quantity, and quality),^[17] use of alcohol, excessive coitus and exercise after meal,^[18] *Ehtebaas ghair tabai* for example cessation of menstruation, hemorrhoids, sweating etc Osteoarthritis is considered an organ's disease that involves the whole joint structure.

4. Clinical presentation

The first and second cervical vertebrae can cause pain in the retro-orbital or temporal region causing stiffness in the neck, occiput pain (pain at the occipital area of the head), upper limb pain occasionally, tingling sensation or even weakness in the upper limbs, dizziness or vertigo, difficulty maintaining balance, and in rare instances, syncopal attacks, migraine episodes, or "false angina." Cervical spondylosis can be identified by less severe neurological abnormalities like inverted supinator jerks, limited neck movements including flexion, extension, lateral flexion, and rotation, and poorly localized pain, unless it is accompanied by myelopathy or radiculopathy.

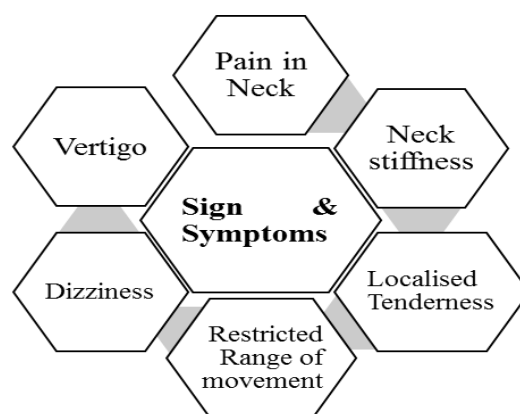


Fig. 1

5. Diagnosis

The diagnosis of cervical spondylosis is made on the basis of clinical presentation or symptoms and signs mention in a fig. 1. The most common objective finding during a physical examination is reduced neck range of motion.^{[19],[20],[21]} plain radiographs are an adequate initial imaging investigation for neck and upper extremity pain. Imaging detected degenerative changes are frequently correlated with the existence of neck pain, Osteophyte formation, disc space narrowing, endplate sclerosis, degenerative alterations of the facet and uncovertebral joints, and calcified soft tissues are common radiographic findings. When evaluating the brain and other soft tissues, MRI remains the investigation of choice.^[22]

6. Management

6.1 Conventional management

The patient's condition and the disease's severity determine the cervical spondylosis treatment strategy. Relieving discomfort, enhancing day-to-day functioning, and preventing irreversible brain system damage are the objectives of treatment. Treatment for cervical spondylosis symptoms and signs should be initiated gradually, starting with non-surgical measures.

▪ Physical therapy

The majority of non-surgical treatment consists of 4-6 weeks of physical therapy with resistance and isometric exercises to strengthen the muscles in the neck and upper

back. There is insufficient evidence to support the use of physical therapies like cervical traction, hot fomentation, ice pack application, ultrasound therapy, therapeutic massage, and transcutaneous electrical nerve stimulator (TENS) for the treatment of acute or chronic neck pain.^[23]

▪ Pharmacotherapy

Medicines such as NSAIDs, systemic steroids, muscle relaxants, antidepressants, and anticonvulsants may be prescribed to treat pain. Injections on trigger points can alleviate the clinical manifestation of myofascial pain which includes pain in the upper arms, shoulders, and neck.

▪ Surgical

Patients who have not responded to non-surgical treatment and who have severe or worsening cervical myelopathy as well as those who experience chronic axial neck discomfort or cervical radiculopathy after non-operative treatments have failed should think about having surgery.^[24]

6.2 Management in unani system of medicine

The Unani system of medicine treats cervical spondylosis using the *Usool-e-Ilaj of Waja-ul-Mafasil*, which includes the regimens of *Ilaj-bit-Tadbeer* (Regimenal therapy), *Ilaj-bil-Dawa* (Pharmacotherapy), and *Ilaj-bil-Ghiza* (Dietotherapy). The objectives of treatment are to improve patients' quality of life, reduce

morbidity, and relieve pain. The fundamental principles of treatment are *Istifragh* (removal of morbid matter), *Tadil-e-Mizaj* (correction of temper), and *Taqwiyat-e-Mafasil* (joint strengthening). The deranged humor is corrected by either *Istifragh-e-Madda* (evacuating morbid matter) or *Imala-e-Mawaad-e-Fasida* (diversion of morbid matter) from the pathology site. Both *muhallilat* (anti-inflammatory drugs) and *musakkinat* (analgesic drugs) reduce pain and inflammation. *Muqawwiyat-e-Asab* (nervine tonics), *Dalak* (massage), and different forms of *Riyazat* (exercise) can all help to strengthen muscles and nerves.

Various single & compound unani formulations^{[25][26]} (Oral and Topical) pharmaceutical agent such as *Suranjan* (Colchium luteum) *Muhallil wa Munzij* (anti-inflammatory), *Chobchini* (Smilax china) *Muhallil wa Munzij* (Anti-inflammatory & Concoctive), *Azaraqi* (*Strychnos nux vomica*) *Muqawwi Aasab* (nervine

tonic), are included in the treatment schedules. *Roghan Babuna*, *Habb e-Asgand*, *Roghan Suranjan*, *Roghan Qust*, and *Roghan Kuchla* used as topical application and compound formulations^[27] such as *Habbe Asgand* (Anti-inflammatory) *Mohallil*, *Habbe Azaraqi*, *Muqawwi - Aasab*^[28] (Nervine tonic), *Habbe Suranjan* (Anti-inflammatory) *Mohallil*.

The treatment plans consist of several regimens like *Hijamah-bil-shart* (wet cupping), *Hijamah-bila-shart* (dry cupping), *Fasd* (venesection), *Irsal-e-Alaq* (leech therapy), *Dalak* (massage), *Riyazat* (Exercise), *Pashoya* (Foot Bath) *Nutool* (irrigation) etc. *Unani* physician *Ibn Sina* in his book *Al Qanoon fit Tib* stated that, Restrictions in movement are caused by vertebral displacement and pain could be extremely intense if nearby nerves are impacted in such cases regimes like *Fasd*, *Hijamah*, etc are beneficial.^[29]

Table 2: Regimenal therapies for cervical spondylosis in unani medicine.

S. no.	Name of Regimenal therapy	Defination	Site
1	<i>Hijamah bil-shart</i> (wet cupping)	Cupping with incision.	❖ <i>Kahil</i> (point on the inter-scapular region below the 7th cervical vertebra), <i>Akhdein</i> (on the back of both ears), <i>Nuqra</i> (at the back of the cranium 4 inches above the neck) ^{[29][30][31][32]}
2	<i>Hijamah bila-shart</i> (Dry cupping)	Cupping without incision.	❖ <i>Kahil</i> , ^{[29][30][31][32]} <i>Akhdein</i> , <i>Nuqra</i>
3	<i>Irsal-e-Alaq</i> (Leech therapy)	Application of Medicinal leech on the affected part.	At the site of pain. ^[29]
4	<i>Fasd</i> (Venesection)	A type of bloodletting procedure where congested veins are incised.	❖ <i>Qaifal</i> (cephalic vein) ❖ <i>Akhal</i> (medial cubital vein) ^{[29][31][32]}
5	<i>Dalak</i> (Massage)	Using hands or objects like rough cloth with or without Oil, apply pressure, kneading, friction, rubbing, and pressing pounding to the affected body parts.	At the site of pain.
6	<i>Nutool</i> (irrigation)	Pouring of Unani medications or lukewarm water or Oil over various parts of the body.	At the site of pain. ^{[29][30][31][32]}
7	<i>Bukhoor</i> (Inkebab)	Medicated Steam	At the site of pain. ^[33]
8	<i>Imala</i> (Diversion)	Removal of morbid material from the disease site.	❖ <i>Kahil</i> , <i>Akhdein</i> <i>Nuqra</i> ^{[29][31][32]}

A proper regime regarding diet should be followed besides the abstinence from food which precipitates the disease. *Zakariya Razi* advised that all kinds of meat are harmful for the *Waja ul Mafasil* patients but bird meat and fish and vegetables are beneficial. Exercises and oil massages are also recommended.^{[34][35][36]} Other dietary items recommended are wheat, pulses especially Bengal gram, Indian Millet, Big beans, French beans, Palak (*Spinacia olearacea* L.), Pyaz (*Allium Cepa* L.), Chuqandar (*Beta vulgaris* L.), Carrot (*Daucus carota* L.), red chilly (*Capsicum annum* L.), black pepper (*Piper*

nigrum L.), Injeer (*Ficus carica* L.), Badam (*Prunus amygdalus* L.), Akhrot, Khajoor (*Phoenix dactylifera* L.), Apricot, Angoor (*Vitis vinifera* L.), Aaloo, Pure ghee, Methi (*Trigonella Foenum* L.), Shaljam (*Brassica rapa* L.), Seb (*Malus sylvestris* L.), Makka (*Zea Mays* L.) and Papita (*Carica papaya* L.).^{[34][35][37][38]}

7. CONCLUSION AND DISCUSSION

People with cervical spondylosis experience a considerable reduction in their quality of life, which makes it necessary to implement efficient management

techniques in order to reduce symptoms and enhance general health. Conventional medical methods mainly concentrate on treating symptoms; in contrast, traditional medical systems like Unani provide a comprehensive approach that treats the underlying imbalances in the body to encourage healing and restore balance. Unani medicine offers a comprehensive framework for managing cervical spondylosis and improving the quality of life for those affected by the condition through the integration of dietary modifications, herbal remedies, manual therapies, and lifestyle interventions. It is concluded that the pain is significantly more severe in patients with a sedentary lifestyle and who do not work compared to those with full-time jobs or part-time work. Due to the nature of their jobs and lifestyles, adults and young people alike frequently suffer from cervical spondylosis. It is currently managed in conventional medicine using a variety of pharmacological and non-pharmacological therapies. The use of cervical collars for extended periods of time weakens the muscles, and non-pharmacological therapies like cervical traction and neck exercises only provide momentary relief. Because they must be taken often, pharmaceuticals such as corticosteroids, NSAIDs, analgesics, and muscle relaxants come with a significant risk of adverse effects. There is currently no known treatment to stop or slow the articular cartilage's degeneration. The well-known allopathic drugs carry the risk of gastrointestinal problems.

Unani Medicine is capable of providing a different, reliable, and effective treatment in this case. *Ilaj bil-Tadbeer (Regimenal therapies)* is a method through which care of the sick person and maintenance of general health is attained through modulation or modification in *Asbaabe Sitta Zarooriya* (six essential factors for life). Regimenal therapies are mostly non-medicinal techniques that we use to modify a patient's lifestyle, food habits, and environment in addition to other therapeutic regimens for a variety of disease treatments. The Unani medical system offers several treatment options with minimal side effects. Treatments such as *Fasd* (venesection), *Hijamah-bil-shart* (wet cupping), *Hijamah bila-shart* (Dry cupping), *Irsal-i-Alaq* (leech therapy), *Dalak* (massage), and *Nutool* (irrigation) are used to address the *Mad'da* (cause) of the disease. Each of the aforementioned Regimenal therapies work as an analgesic and are generally safe with no known side effects, Normal health is restored as soon as these morbid *Humours* are eliminated from the body. Ancient Unani physicians have been using it for thousands of years for both therapeutic and preventive purposes.

Still in order to validate the long-term effects of these treatment methods with scientific validation, research is required. Research on cervical spondylosis is something we plan to keep doing, to assess patients' physical and mental health and to provide a more comprehensive understanding of cervical spondylosis and its improved treatment.

REFERENCES

1. Colledge NR, Ralston SH, Walker BR. Davidson's Principles and of Practice of Medicine. Churchill Livingstone, 2010; 21: 1221.
2. Matsumoto M, Fujimura Y, Suzuki N, et al. MRI of cervical intervertebral discs in asymptomatic subjects. *Journal of Bone and Joint Surgery—Series B*, 1998; 80(1): 19–24.
3. Boden SD, Davis DO, Dina TS, Mark AS, McCowin PR, Wiesel S. Abnormal magnetic-resonance scans of the cervical spine in asymptomatic subjects. A prospective investigation. *Journal of Bone and Joint Surgery—Series A.*, 1990; 72(8): 1178–1184.
4. Lehto IJ, Tertti MO, Komu ME, Paaanen HEK, Tuominen J, Kormano MJ. Age-related MRI changes at 0.1 T in cervical discs in asymptomatic subjects. *Neuroradiology*, 1994; 36(1): 49–53.
5. Buchbinder R, De R, Hoy DG, Protani M. The epidemiology of neck pain. *Best Pract Res Clin Rheumatol*, 2010; 24(6): 783-92.
6. Kelly JC, Groarke PJ, Butler JS, Poynton AR, O'Byrne JM. The natural history and clinical syndromes of degenerative cervical spondylosis. *Adv Orthop*, 2012; 2012: 393642.
7. Hurwitz EL., The Global Spine Care Initiative: a summary of the global burden of low back and neck pain studies. *Eur Spine J*, 2018; 27(6): 796-801.
8. *Ismail Jurjani, Zakheera Khawarsham Shahi.* (Urdu translation by Khan HH). New Delhi: Idara Kitabus Shifa, 2010; 2(6): 637-40. 6.
9. *Akbar Arzani. Tibe Akbar.* (Urdu Translation by Mohammad Husain). Deoband: Faisal Publications; YNM, 617- 28.
10. *Khan M A. Akseer-e-Azam* (Urdu Translation by Hkm. Mohd Kabeeruddin). New Delhi: Idara Kitab-ush-Shifa, 2011; 832-852.
11. *Sina I. Al-Qanoon Fit Tib.* Vol. I & III. (Urdu translation by GH Kantoori). New Delhi: Idara Kitab-ush-Shifa, 2010; 1119-21.
12. Baron E.M, Young W.F., Cervical spondylotic myelopathy: A brief review of its pathophysiology, clinical course, and diagnosis. *Neurosurgery*, 2007; 60: 35–41.
13. Epel E.S, Mellon S.H, Reus V.I, Wolkowitz O.M. Depression gets old fast: Do stress and depression accelerate cell aging? *Depress. Anxiety*, 2010; 27: 327–338. doi: 10.1002/da.20686
14. Brennan P. A, Hammen C.L, Keenan-Miller D. Health outcomes related to early adolescent depression. *J. Adolesc. Health*, 2007; 41: 256–262.
15. Black S. A., Markides K. S., Ray L.A. Depression predicts increased incidence of adverse health outcomes in older Mexican Americans with type 2 diabetes. *Diabetes Care*, 2003; 26: 2822–2828.
16. *Razi Z, Kitab-al-Hawi.* (Urdu translation); New Delhi: CCRUM, 2004; 11: 75-188.
17. *Zakariya Razi, Kitabul Mansoori.* Urdu Translation by CCRUM, New Delhi: Ministry of Health and Family Welfare Govt. of India, 1991; 313-318.

18. Ali Ibn Abbas Majoosi, Kamilus Sanah. (Urdu translation by Kantoori GH) New Delhi: Idara Kitabus Shifa, 2010; 1: 543-46.
19. DENNO JJ, MEADOWS GR, Early Diagnosis of Cervical Spondylotic Myelopathy: A Useful Clinical Sign. Spine (Phila Pa 1976) [Internet], 1991; 16(12).
20. Benzel EC, McCormick WE, Steinmetz MP. Cervical spondylotic myelopathy: make the difficult diagnosis, then refer for surgery. Cleve Clin J Med [Internet], 2003; 70(10): 899—904.
21. Garfin S.R., Cervical degenerative disorders: Etiology, presentation, and imaging studies, 2000; 49: 335– 345. 2000; 2000.
22. Kuo DT, Tadi P, Cervical spondylosis [Internet]. Tufts Medical Center: StatPearls Publishing, Treasure Island (FL), 2022 [2022; 5].
23. Panel P. Philadelphia Panel evidence-based clinical practice guidelines on selected rehabilitation interventions for neck pain. Phys Ther, 2001; 81(10): 1701- 17.
24. Rao RD, Currier BL, Albert TJ, Bono CM, Marawar SV, Poelstra KA, Eck JC. Degenerative cervical spondylosis: clinical syndromes, pathogenesis, and management. J Bone Joint Surg Am, 2007; 89(6): 1360-78.
25. Kabiruddin M. Mukhzanul Mufradat. Lahore: Sheikh Mohd Basheer and Sons, 1996; 116: 117.
26. Kabir H. Introduction to Ilmul Advia. New Delhi: Shamsheer Publisher and Distributors, 2002; 1.
27. AYUSH. The Unani Pharmacopoeia of India. New Delhi: CCRUM, 2010; 2.
28. Kabeeruddin M. Bayaz-e-kabeer. Aijaz Publication House, 1935.
29. Sina I. Al Qanoon fit-Tib. New Delhi: Aijaz Publication House, 2010.
30. Zuhr I. Kitab ul Taiseer. New Delhi: CCRUM, 1992.
31. Hamdani. Usool-e-Tib. Aligarh: Qaumi Council Baraye Farogh Urdu Zabaan, 2011.
32. Khan JA, Nikhat S, Ahmad N, Zohaib S, Parray SA. Fasad (venesection): an important regimental therapy in Unani System of medicine. Tang Hum Med, 2017; 7(4): 4.
33. Mohammad SH, Fasihuzzaman, Jabeen A, Siddiqui MA. Unani concept and management of Waja-Ul-Mafasil (arthritis) with special reference to Hijamah (cupping therapy). Indo Am J Pharm Res, 2014; 4: 1098-103.
34. Arzani, A. (YNM) Tibb e Akbar (Persian), (2), Matba Munshi Nawal Kishore, Kanpur, 307-312.
35. Chugmani, S. Tarjuma Qanooncha Ma' Risalai Qabriya (Arabic), Matba Munshi Nawal Kishore, Lucknow, 1889; 78-79.
36. Razi, Z. Kitab al Mansoori (Urdu), CCRUM, New Delhi, 1991; 283-284, 391-394.
37. Baghdadi, I. H. Kitabul Mukhtarat Fit Tibb (Arabic), Matba Jamiyat Dayiratul M'arif, Hyderabad, 1364; (4): 84-100.
38. Farishta, A. Q. Ikhtiyarat e Qasmi (Persian), Library and Information Centre CCRUM, New Delhi, 1317; 226-227.