JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

Prevention & Managements of Cervical Spondylosis in Unani System of Medicine- A Review Article

*** Dr. Shaikh Mudassar Shaikh Altaf Maniyar [1], Dr. Malik Tauheed Ahmed [2], Dr. Syed Abid-Ur-Rahman [3], Mr. Sayyed Mukhim Sayyed Salim [4], Mr. Aaquib Jaweed [5],**

[*1] Lecturer, Dept. of Moalijat (Medicine), Iqra Unani medical College & Hospital, Jalgaon.

[2] Professor & HOD, Dept. of Ilmul-Saidla, Yunus Fazlani Unani medical College & Hospital, Kunjkheda. Sambhaji Nagar.

[3] Associate Professor, Dept. of Amraz-e-Jild wa Taziniyat, Al-Amin Unani Medical College & Hospital, Malegaon.

[4] Head of Dept. (Pharmacology) VSS Institute of Pharmacy, Badnapur, Dist. Jalna.

[5] Assistant Professor, Dept. of Pharmacology, Vastanvi College of Pharmacy, Kunjkheda. Sambhaji Nagar.

Abstract

Musculoskeletal conditions are the leading contributors to disability worldwide, typically characterized by pain. After back pain, neck pain is the most frequent musculoskeletal cause of consultation in primary care worldwide. Cervical spondylosis is a chronic degenerative process of the cervical spine characterized by pain in the neck, degenerative changes in the intervertebral disc, and osteophyte formation. This condition is known as waja′ur raqaba in the Unani system of medicine. Its increasing prevalence is drawing the attention of the medical fraternity. Due to the limited efficacy of conventional treatment and potential side effects of long-term use, patients seek alternative treatment options. Unani physicians claimed the management of various joint disorders with the help of several tadabir. The objective of this critical review is to address the claims of Unānī physicians and clinical studies conducted on the efficacy of various Regimenal modalities in the management of joint pain. It was extracted that several Regimenal modalities are effective in the management of various joint disorders including cervical spondylosis.

Keywords: ′Ilaj bit-tadbir; ḥijama; cervical spondylosis; Unani Medicine

I. Introduction of Cervical spondylosis

Cervical spondylosis is derived from Latin words; Cervic means "neck", and Spondyl, osis means "vertebra condition"[1]. Cervical spondylosis is a chronic degenerative process of the cervical spine characterized by pain in the neck, degenerative changes in the intervertebral disc, and osteophyte formation[2,3]. After back pain, neck pain is the most frequent musculoskeletal cause of consultation in

primary care worldwide[4]. About two-thirds of the population have neck pain at some time in their lives with an incidence of 10% at age 25 and 75% by the age of 65 and prevalence is highest in middle age[4,5]. The cervical spondylosis prevalence rate is 3.3 patients per 1000 people in the general population[3]. Cervical spondylosis usually occurs in middle-aged and elderly people[5]. According to the Global Burden of Disease (GBD) 2015, more than a third of a billion people worldwide had mechanical neck pain of at least 3 months duration, underscoring the global healthimplications of degenerative cervical spondylosis[6].

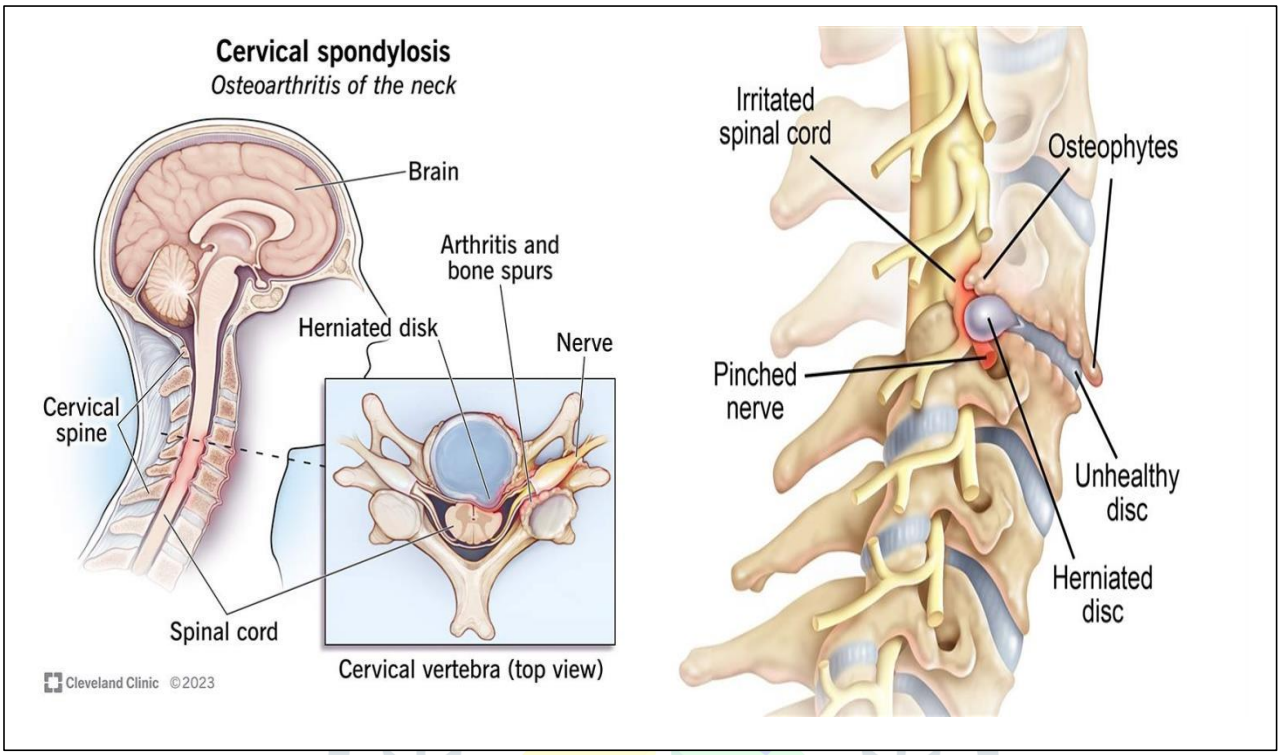

Fig. 01 Anatomy of Cervical spondylosis

Waja′ur Raqaba has not been described directly in classical Unani text. Most of the eminent physicians have used a broad term waja'ul mafaṣil to describe the joints pain and named them according to the site of pain like waja′ur rukaba (knee pain), waja′ul warik (ischial pain), 'irqun-nasa (sciatica), niqris (gout), etc.[7-9]. Similarly, when pain occurs in fiqrat-i-unuq (cervical vertebrae), it is termed as waja′ur raqaba (cervical spondylosis).

The etiology of cervical spondylosis is poorly understood and usually multifactorial including poor posture, anxiety, advancement of age, occupational heavy loading, trauma, depression, neck strain, and sporting[4]. Age-related degenerative changes in the cervical spine are considered the primary cause of cervical spondylosis[10]. These changes include reduction in one or more-disc spaces, changes in the normal curvature of the spine, formation of osteophytes, sclerosis of parts of the vertebrae adjacent to the damaged discs[11]. The development of osteophytes may cause compression of nerve roots resulting in the development of radiculopathy which produces neck pain that radiates in the distribution of the affected nerve root[2]. While bothspinal cord (neural) and vascular compressions are responsible for the myelopathic symptoms[12].

Ibn Sina categorized the etiology of waja′ul mafaṣil into two types which is implemented on waja′ur raqaba also

1. Asbab-i-fa′ilah (primary causes)
2. Asbab-i-munfa′ilah (secondary causes)

II. Causes of Cervical spondylosis

A. Asbāb-i-fa′ilah (Primary causes)

➢ **Su-i-mizaj (Deviated temperament)**

Deviation in the temperament may be general (entire body) or local (a particular region). Different types of kaifīyat (qualities) act in different ways such as ḥararat as a multaḥib (inflammatory), Burūdat as a mubarrid (refrigerant), and munjamid (consolidant), yabūsat as a munqabiḍ (astringent). These temperamental deviations aggravate when rutūbāt-i-gharība (abnormal fluids) are involved[8].

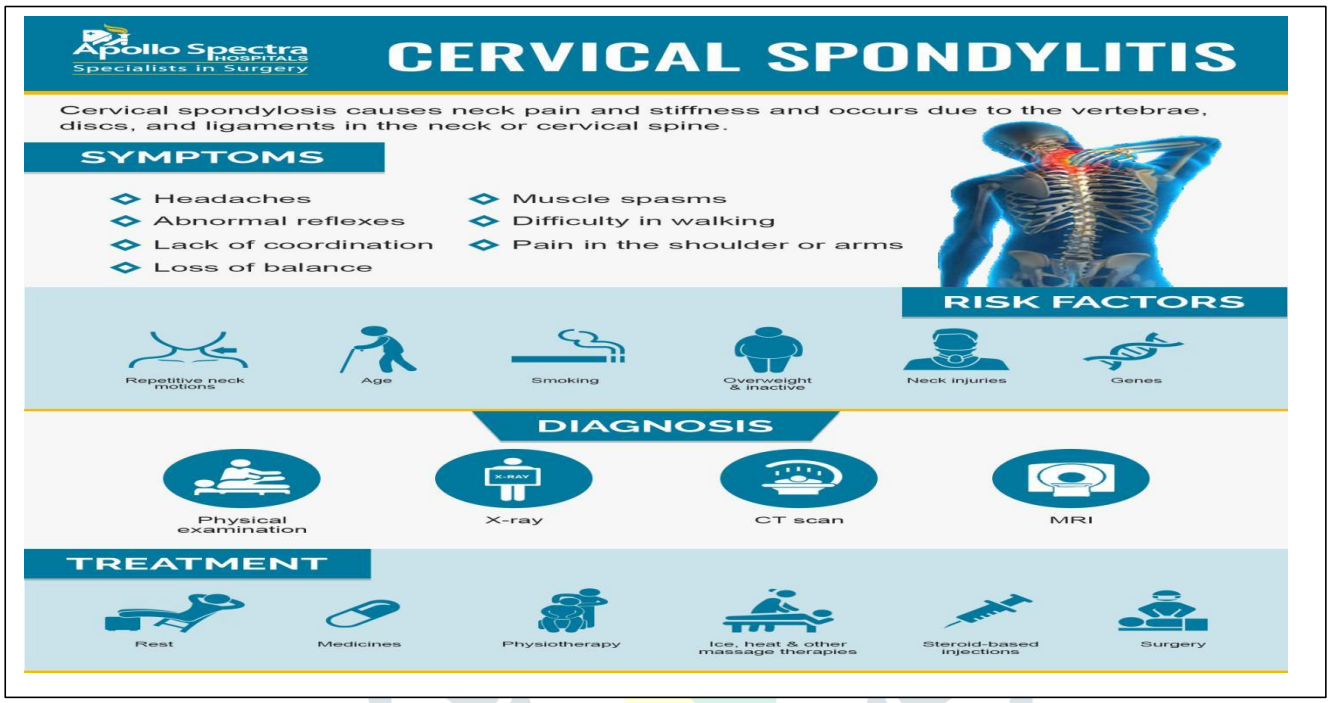

Fig. 02 Symptoms and treatment of cervical spondylosis

➢ **Mawād-i-Fāsida (Morbid matters)**

The morbid matter may be dam-i-khaliṣ (pure blood), dam-i- balghami (phlegmatic blood), dam-i-ṣafrawi (bilious blood), dam-i-ṣaudawi (melancholic blood), balgham-i- khaliṣ (pure phlegm), sudda-i-balgham-i-kham (obstruent of raw phlegm), Mirrahe khaliṣ (pure bilious), Balgham and Mirrah ka murakkab (phlegmatic bilious), Midda (pus), Riyaḥ (flatulence). It is usually caused by the quantitative or qualitative disproportion of Khilt-i- Balgham (phlegmatic humour) then Balgham-i-Khām (raw phlegm), then Khilt-i-dam (sanguine humour), then Khilt-i-ṣafra (bilious humour) and rarely due to Saudā (black bile) [8,13].

B. Asbab-i- munfa′ilah (Secondary causes)

These causes indirectly affect the joints and make the joint susceptible to accept the morbid material and cause structural as well as functional disturbance in the joints such as:

➢ Widening of Majra-i-tabaiya (natural passage) due tocongenital and acquired causes

➢ Formation of new unnatural passage due to movement

➢ An increased movement produces more heat in the joint[8]

The pathogenesis of cervical spondylosis involves a degenerative cascade that produces biomechanical

changes in the cervical spine, manifesting as secondary compression of neural and vascular structures[14]. Degenerative changes begin with intervertebral disc desiccation, which is associated with an increase in the ratio of keratin sulfate to chondroitin sulfate. An increase in the keratin-chondroitin ratio prompts changes to the proteoglycan matrix resulting in loss of water, protein, and mucopolysaccharides within the intervertebral disc. Desiccation of the disc causes the nucleus pulposus to lose its elasticity as it shrinks and becomes more fibrous. As the nucleus pulposus loses its ability to maintain weight-bearing loads effectively, it begins to herniate through the fibres of the annulus fibrosus and contributes to the loss of disc height, ligamentous laxity and buckling, and compression of the cervical spine. With further disc desiccation, the annular fibres become more mechanically compromised under compressive loads, producing significant alterations in the load distribution along the cervical spine. The result is a reversal of the normal cervical lordosis. Progression of the kyphosis causes the annular and Sharpey's fibres to peel off from the vertebral body edges, resulting in reactive bone formation[12,14,15]. These pathological changes occur most frequently at the C5-C6 and C6-C7 levels as most of the sub axial flexion-extension movement occurs at these levels[15].

Ṣihat (health) lasts when the akhlaṭ (humours) are in "etedali kaifiyat" (equilibrium) and disease occurs due to disequilibrium among akhlaṭ. This is the basis of the pathology of the disease[16]. Zakaria Razi said that the first and foremost cause of waja′ul mafaṣil lies in the abnormal formation of chyme, and this abnormal chyme produces abnormal akhlaṭ particularly Ghayr Ṭaba′ī Balgham (abnormal phlegm). This Ghayr Ṭabai Balgham (abnormal phlegm) gets accumulated in the joints of the body causing swelling, tenderness, and pain. Waja′ul-Mafāṣil clinically resembles osteoarthritis. When these changes occur in Fiqrate 'Unuq (cervical vertebrae), they cause Waja′ur Raqaba (cervical spondylosis)[17].

III. Diagnosis of Cervical spondylosis

Your health care provider will likely start with a physical exam that includes:

- Checking the range of motion in your neck
- Testing your reflexes and muscle strength to find out if there's pressure on your spinal nerves or spinal cord
- Watching you walk to see if spinal compression is affecting your gait

Imaging tests can provide detailed information to guide diagnosis and treatment. Examples include:

- **Neck X-ray.** An X-ray can show changes in the spine, such as bone spurs, that indicate cervical spondylosis. Neck X-ray can also rule out rare and more serious causes for neck pain and stiffness, such as tumors, cancer, infections or fractures.
- **Magnetic resonance imaging (MRI).** Using radio waves and a strong magnetic field, MRI can produce detailed images that can help pinpoint areas where nerves might be pinched.
- **Computed tomography (CT) myelography.** In this type of computed tomography (CT) scan, a dye is injected into the spinal canal to provide more-detailed imaging. This test makes it easier to see the details of the spinal cord, spinal canal and nerve roots.

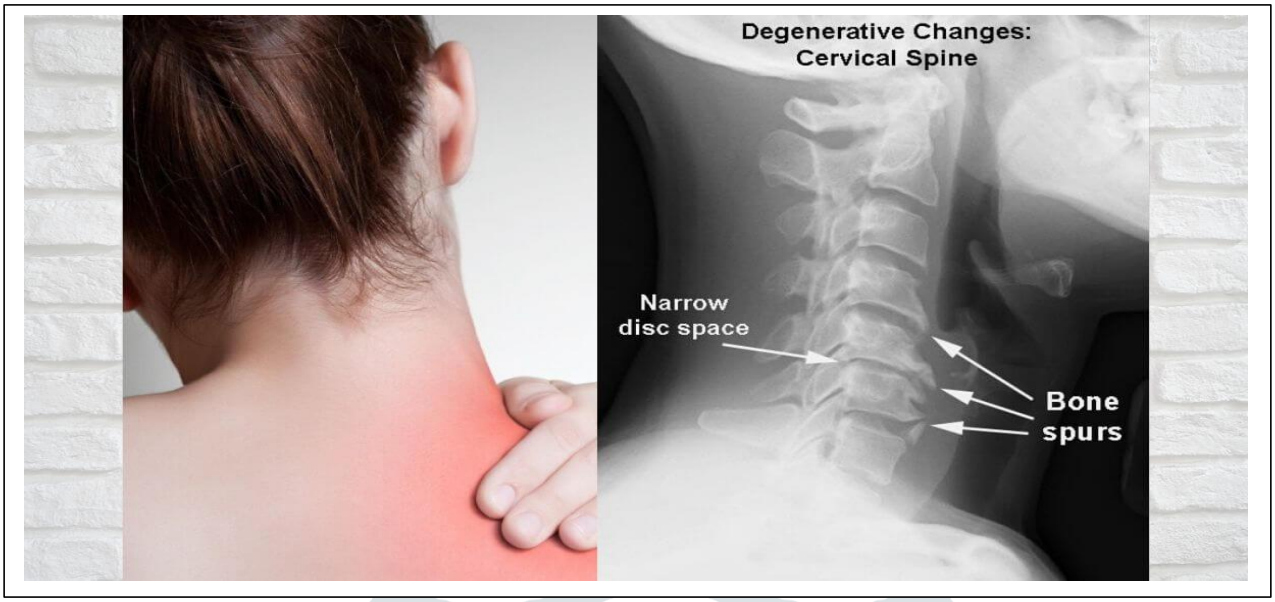

Fig.03 Degenerative changes in cervical spine in cervical spondylosis

Nerve function tests

You may need tests to determine if nerve signals are traveling properly to your muscles. Nerve function tests include:

- **Electromyography.** This test measures the electrical activity in your nerves as they transmit messages to your muscles when the muscles are contracting and at rest.
- **Nerve conduction study.** Electrodes are attached to the skin above the nerve to be studied. A small shock is passed through the nerve to measure the strength and speed of nerve signals.

IV. Clinical Features of Cervical spondylosis

An individual with degenerative change in the cervical spine may be asymptomatic or can present as pure axial neck pain, cervical radiculopathy, cervical myelopathy, or cervical myeloradiculopathy[18].

Axial neck pain

1. Stiffness and pain in the cervical spine are the common complaints that are more severe in the upright position and relieved with bed rest. Neck motion, especially in hyperextension and side-bending, or by activities in which the neck is held in the same position for a prolonged period, typically increases the pain [14].
2. In upper cervical spine diseases, patients may report radiating pain into the back of the ear or occiput while in the diseases of the lower cervical spine, patients may report radiating pain into the superior trapezius or periscapular musculature.
3. Jaw pain or chest pain may also be associated as an atypical symptom with cervical spondylosis, occasionally[14].

Cervical radiculopathy

Cervical radiculopathy is caused by the compression of one or more nerve roots[11].

1. Radicular symptoms can present as unilateral or bilateral neck pain, arm pain, scapular pain, paresthesia, and arm or hand weakness.
2. Pain is exacerbated by a head tilt, hyper-extension, and side-bending towards the affected side [14].

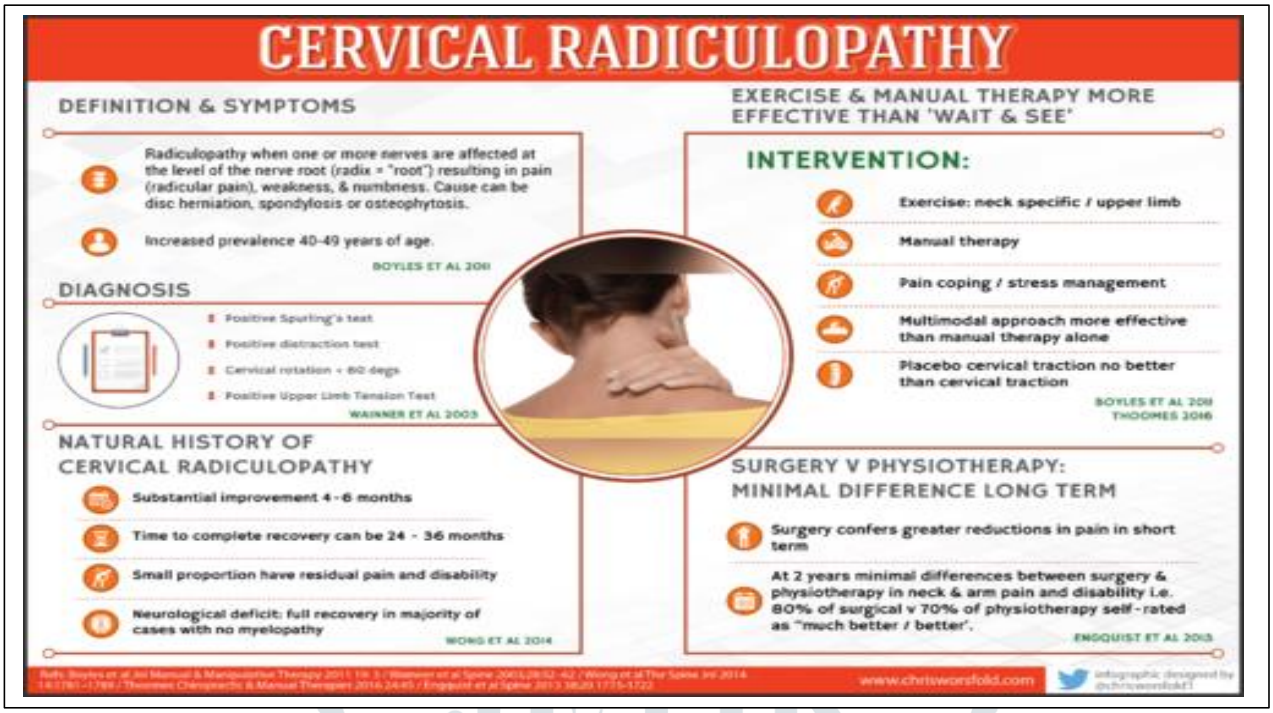

Fig. 04 Cervical Radio-culopathy of cervical spondylosis

Cervical myelopathy

Cervical myelopathy is a condition caused by the compression of the spinal cord[19]. Cervical spondylosis is the most common non-traumatic cause of myelopathy in the cervical spine[20].

- It can initially be presented with hand weakness and clumsiness, resulting in the inability to complete tasks requiring fine motor coordination (e.g., buttoning a shirt, tying shoelaces, picking up small objects).
- Gait instability and unexplained falls are reported with cervical myelopathy.
- Urinary symptoms (i.e., incontinence) are rare and typically appear late in disease progression [14].

Description of clinical features of Waja′ul Mafaṣil present in the classical textbooks of Unānī medicine is based on causative factors in the case of Su-i-Mizaj Sada

- The onset of pain is gradual
- No change in skin colour
- Pain without heaviness, inflammation or swelling in caseof Riyaḥ
- Pain with tension
- Pain is shifting in nature
- Absence of heaviness but severe distension in the caseof Khilti Madda
- Sudden onset of disease
- Pain with heaviness
- change in skin colour
- Presence of marked swelling or inflammation [7]

V. Management of Cervical spondylosis

Cervical spondylosis is managed by pharmacological, non- pharmacological and surgical intervention

depending on the condition and severity of the case[11]. Non-pharmacological management includes manual therapy, hot packs, exercise therapy, strength training, endurance training, and stretching, massage, short wave diathermy, transcutaneous electrical nerve stimulation, ultrasound, interferential therapy, and infra-red radiations, etc[21]. Pharmacological intervention includes non- steroidal anti-inflammatory drugs, muscle relaxants, opioid analgesics, corticosteroids, and anti-emetics[22,23]. Surgical intervention should be considered in patients with severe or progressive cervical myelopathy, or cervical radiculopathy following the failure of non-operative measures[14]. The use of analgesics provides significant relief in symptoms of cervical spondylosis for a very short time, but their prolonged use may induce several adverse effects[24].

VI. Risk Factors of Cervical Spondylosis

Several risk factors increase the likelihood of developing cervical spondylosis. These include advancing age, a sedentary lifestyle, occupations involving repetitive neck movements or heavy lifting, smoking, obesity, and a family history of the condition. Understanding these risk factors can help in taking preventive measures. The following individuals are at an increased risk of developing cervical spondylosis:

- Older Adults: Advancing age is a significant risk factor for cervical spondylosis. As we age, the spinal discs gradually degenerate, leading to the development of this condition
- Smokers: Cigarette smoking has been associated with an increased risk of cervical spondylosis. The harmful chemicals present in tobacco can contribute to the degeneration of spinal discs and accelerate the progression of the condition.
- Family History: Having one or more family members with cervical spondylosis can increase the likelihood of developing the condition. Genetic factors may play a role in the susceptibility to spine degeneration.
- Occupational Factors: Certain professions that involve repetitive neck movements or prolonged strain on the neck are associated with an elevated risk of cervical spondylosis. Examples include painters who frequently look overhead, plumbers or flooring installers who maintain a downward head position, and individuals who work with improper neck posture for extended periods, such as those who stare at improperly positioned computer screens.
- Previous Neck Injuries: Individuals, who have experienced a neck injury, such as from a car accident or a fall, are at a higher risk of developing cervical spondylosis. Trauma to the neck can accelerate the degenerative changes in the spine.
- Heavy Lifting: Engaging in activities that involve heavy lifting, such as construction work, can put excessive strain on the neck and increase the risk of cervical spondylosis.
- Vibration Exposure: Prolonged exposure to vibrations, such as those experienced by bus or truck drivers, can contribute to the development of cervical spondylosis.

VII. Prevention of Cervical Spondylosis

Although it may not be possible to completely prevent cervical spondylosis, certain lifestyle modifications can reduce the risk and delay its onset.

- Maintaining good posture

- Practicing regular neck exercises and stretches
- Avoiding excessive strain on the neck
- Managing weight
- Quitting smoking

VIII. Unānī treatment of Cervical spondylosis

Waja′ur Raqaba is treated on the same line of treatment as waja′ul mafāṣil. The line of treatment, to restore and normalize the Su-i-Mizaj, Unani physicians described Uṣul-i-′Ilaj in the same manner according to causative factors those produce pain in cervical region[17,25].

This can be done by any one of these three treatment modalities viz., ′Ilāj bit-Tadbir (Regimenal therapy), ′Ilaj bid-Dawa' (pharmacotherapy) and Ilāj bi′l-Yad (surgical therapy). It does not mean that the use of these three methods is mandatory in every treatment simultaneously, but it means that no fourth method is required, and the aim of treatment is achieved only by one or two or all these three accordingly[26,27].

Ilaj bit-Tadbir (Regimenal therapy)

Lots of claims and evidence for the effectiveness of several Regimenal modalities in the management of cervical spondylosis are available. Different types of regimes are claimed beneficial for musculoskeletal disorders viz; dalk (massage therapy), riyazat (exercise). nutool (douching), abzan (sitz bath), takmeed (fomentation), hammam (Turkish bath), Ḥijama (cupping)[28-30].

Ḥijāma (Cupping)

Ḥijāma is an Arabic word which technically means the application of cups and the literal meaning of Ḥijama is sucking. Jalinūs has mentioned that in cases of the accumulation of thick humours in the joint, Ḥijāma is very useful. It is a technique carried out by application of cup on the body surface by creating vacuum either through heat or by special suction apparatus for evacuation of the morbid materials, diversion of the material from the diseased part and to encourage the blood flow to the affected site.

Based on scarification Ḥijāma has been classified into two main types.

- Ḥijāma bila-Sharṭ (dry cupping)
- Ḥijāma bish-Sharṭ (wet cupping)

Cupping therapy works in two ways

- Tanqiya-i-Mawad (Evacuation of morbid matter)
- Imāla-i-Mawad (Diversion of morbid matter)

Ḥijāma bila Shart works on the principle of Imala-i-Mavad (diversion of morbid matter) and causes the diversion of morbid matter from one site to another.

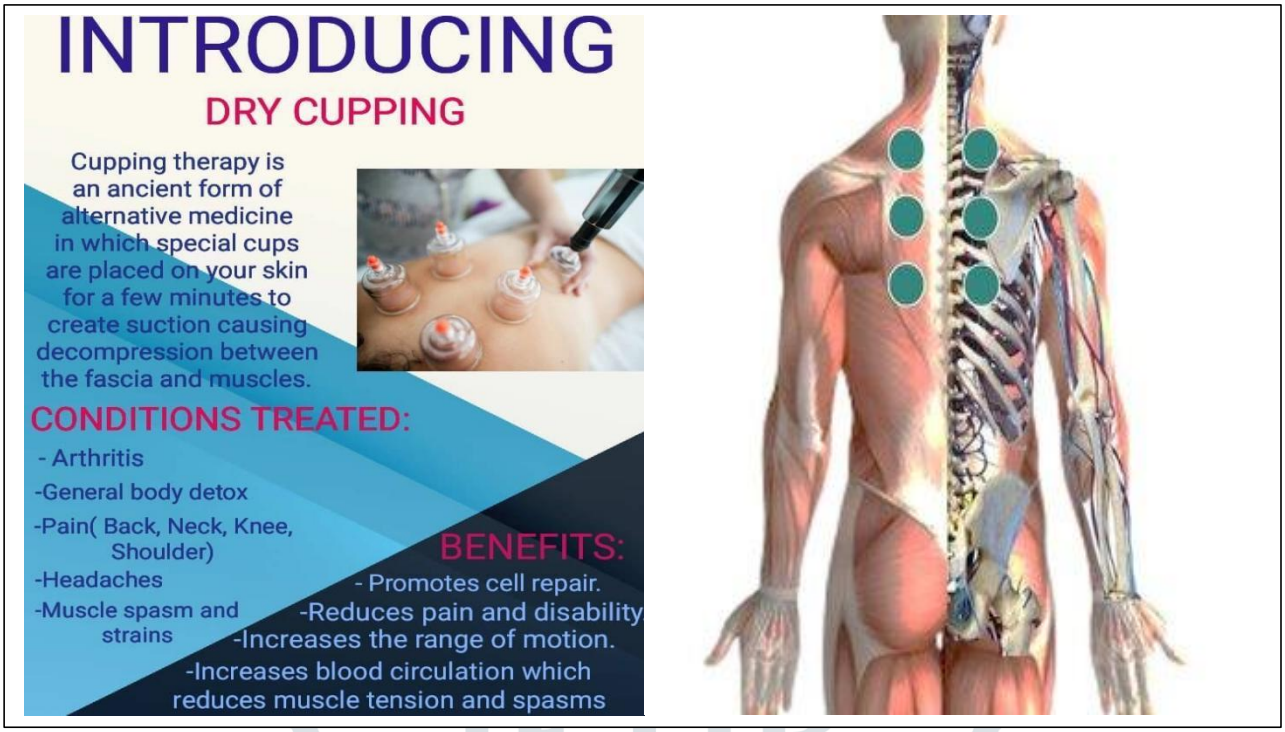

Fig. 05 Dry cupping for cervical spondylosis

Ḥijama bish Shart works on the principle of Tanqiya-i-Mavad (evacuation of morbid matter) and evacuates the morbid matter from the body. Kim TH *et al.* reported the efficacy of cupping therapy and an exercise program in reducing the pain and improving the neck function among the participants in study. The effectiveness of wet cupping therapy in non-specific neck and shoulder pain was reported by Arslan *et al.*, Lauche R *et al.* concluded that significant increases were found after cupping therapy in physical functions and quality of life in the patients with chronic nonspecific neck pain and suggested that cupping treatment might have sustainable effects for up to 2 years. Similarly, Wen MX *et al.* concluded that wet cupping therapy provides a rapid therapeutic effect in nerve-root type cervical spondylosis, thus exhibiting significant analgesic effects.

Dry cupping is an ancient form of alternative medicine that has been gaining popularity in recent years. This therapy involves placing special cups on the skin for a few minutes to create suction, causing decompression between the fascia and muscles. Dry cupping is known to provide relief for a wide range of conditions, including arthritis**,** general body detox, and pain in the back, neck, knee, and shoulder. During a dry cupping session, a therapist will place special cups made of glass, silicone, or plastic on your skin. The cups are then heated or pumped to create suction, which pulls the skin and underlying tissues upward. This suction creates a decompression between the fascia and muscles, allowing increased blood flow and promoting healing. Dry cupping has been used to treat a wide range of conditions, including arthritis, general body detox, and pain in the back, neck, knee, and shoulder. Cupping is believed to help release tension and promote relaxation, making it an excellent therapy for reducing stress and anxiety.

Fig. 06 various types dry cupping for cervical spondylosis

Benefits of Dry Cupping

- Promoting Cell Repair: Cupping therapy can help promote cell repair and regeneration by increasing blood flow to the affected area.
- Reducing Pain and Disability: Dry cupping has been shown to reduce pain and disability in conditions such as arthritis and back pain.
- Improving Range of Motion: Cupping therapy can increase the range of motion in the affected joint or muscle by reducing stiffness and tension.
- Relieving Muscle Spasms: Cupping therapy can help relieve muscle spasms and cramps by increasing blood flow and oxygenation to the affected area.
- Headaches: Dry cupping has also been used to treat headaches by reducing tension and promoting relaxation.

IX. Treatment of Cervical spondylosis

Treatment for cervical spondylosis depends on its severity. The goal of treatment is to relieve pain, help you maintain your usual activities as much as possible, and prevent permanent injury to the spinal cord and nerves. If nonprescription pain relievers aren't enough, your health care provider might prescribe:

- **Non-steroidal anti-inflammatory drugs.** Non-steroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen (Advil, Motrin IB, others) and naproxen sodium (Aleve), are commonly available without a prescription. You may need prescription-strength versions to relieve the pain and inflammation associated with cervical spondylosis.

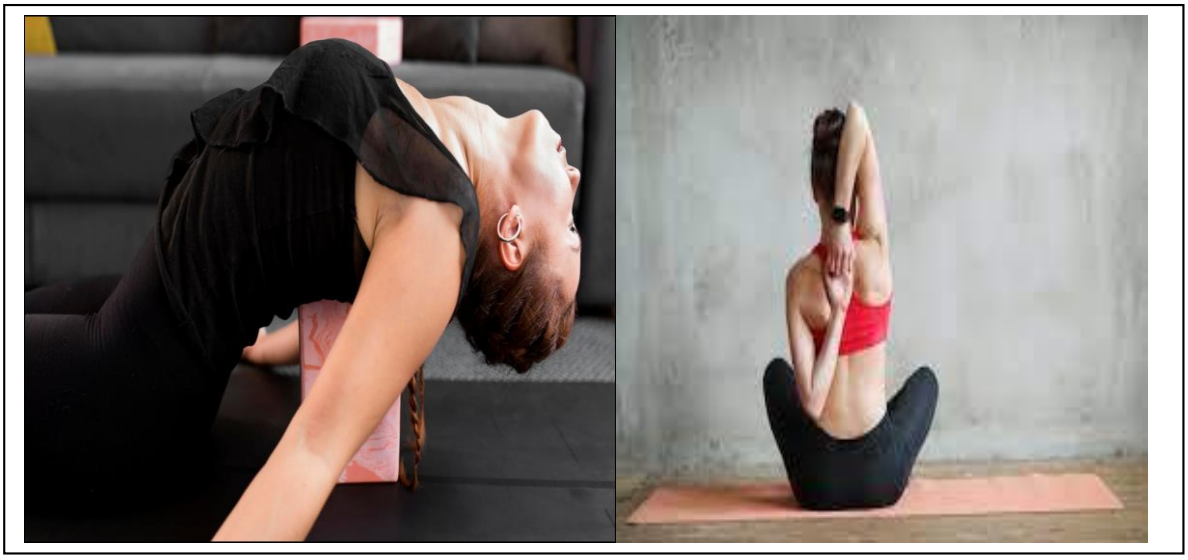

Fig. 07 Various Exercise for Cervical spondylosis

- **Corticosteroids.** A short course of oral prednisone might help ease pain. If your pain is severe, steroid injections may be helpful.
- **Muscle relaxants.** Certain drugs, such as cyclobenzaprine (Amrix, Fexmid), can help relieve muscle spasms in the neck.
- **Anti-seizure medications.** Some epilepsy medications can dull the pain of damaged nerves.
- **Antidepressants.** Certain antidepressant medications can help ease neck pain from cervical spondylosis.

A physical therapist can teach you exercise to help stretch and strengthen the muscles in your neck and shoulders. This can be one of the best treatments for the pain and stiffness. Some people with cervical spondylosis benefit from the use of traction, which can help provide more space within the spine if nerve roots are being pinched. If conservative treatment fails or if neurological symptoms such as weakness in your arms or legs worsen, you might need surgery to create more room for your spinal cord and nerve roots. The surgery might involve removing a herniated disk, bone spurs or part of a vertebra. A segment of your neck may need to be fused with bone grafts and hardware. Mild cervical spondylosis might respond to:

- **Regular exercise.** Maintaining activity will help speed recovery, even if you have to temporarily modify some of your exercises because of neck pain. People who walk daily are less likely to experience neck and low back pain.
- **Pain relievers you can buy without a prescription.** Ibuprofen (Advil, Motrin IB, others), naproxen sodium (Aleve) or acetaminophen (Tylenol, others) is often enough to control the pain associated with cervical spondylosis.
- **Heat or ice.** Applying heat or ice to your neck can ease sore neck muscles.
- **Soft neck brace.** The brace allows your neck muscles to rest. However, a neck brace should be worn for only short periods of time because it can eventually weaken neck muscles and cause neck stiffness.
-

Conclusion

In the view of Unani perspective, it can be concluded that ′ ilāj bit-tadbīr (Regimenal therapy) is an effective method of treatment for the management of waja′ur raqaba (cervical spondylosis). Regimenal therapy is one of the important modes of Unāni treatment which plays a pivotal role in the health care system. Several regimens such as Dalk (massage), Ḥijama (cupping), Faṣd (venesection), Irsal-i-′alaq (leech therapy), Takmīd (fomentation), Ḥammām (Turkish bath), Ḍimad / Tila (Ointment / Liniment) and Riyaḍat (exercise), etc. have been recommended by Unanī physicians for the treatment of waja′ur raqaba. Some Regimenal modalities are richly evidenced for their effectiveness against various musculoskeletal conditions. But others need to be evaluated scientifically for their efficacy in cervical spondylosis and other joint disorders. Detailed studies regarding the mechanism of action and well-designed standard operating procedures of Regimenal procedures, supported by scientific studies to open new therapeutic avenues, and worldwide acceptance would help in the safe and efficient application of these regimens.

References

1. Venes D, Editor. Taber's Encyclopedic Medical Dictionary. Vol 1 & 2. 20th ed. New Delhi: F.A. Davis Company Philadelphia; 2006.

2. College NR, Walker BR, Ralston SH. Davidson's Principles and of Practice of Medicine. 21st ed. USA: Churchill Livingstone; 2002.

3. Reddy RS, Maiya GA, Rao SK. Proprioceptive reposition errors in subjects with cervical spondylosis. IJHSR 2012; 1(2): 65-73.

4. Binder A I. Cervical spondylosis and neck pain. BMJ. 2007; 334(7592): 527-31. DOI: 10.1136/bmj.39127.608299.80

5. Holly LT, Wang C, Woodworth DC, Salamon N, Ellingson BM. Neck disability in patientswith cervical spondylosis is associated with altered brain functional connectivity. J. Clin. Neurosci 2019; 69: 149-54. DOI: 10.1016/j.jocn.2019. 08.008.

6. Theodore N. Degenerative cervical spondylosis. N Engl J Med 2020; 383(2): 159-68. DOI: 10.1056/NEJMra2003558.

7. Khan M A. Akseer-e-Azam. New Delhi: Idara Kitab-ush-Shifa; 2011.

8. Sina I. Al-Qanoon Fit Tib. Vol. I & III. (Urdu translation by GH Kantoori). New Delhi: Idara Kitab-ush-Shifa; 2010.

9. Mohammad Shahid Khan, S. Javed Ali, Mohd Nayab, Abdul Aziz. Effect of Massage with Roghan Biskhapra (Oil of *Trianthema portulacastrum* L.) in Rheumatoid Arthritis: Case Reports of Two Patients. RRJoHS 2015; 4(3): 1-3.

10. Ferrara LA. The biomechanics of cervical spondylosis. Adv. Orthop; 2012. p. 1-5. doi:10.1155/2012/493605.

11. Golwalla AF, Golwalla SA, Nadker MY. Golwalla's Medicine for Students. 25th Ed. New Delhi: Jaypee Brothers Medical Publisher; 2017.

12. Mullin J, Shedid D, Benzel E. Overview of cervical spondylosis pathophysiology and biomechanics.

World spinal column J 2011; 2(3): 89-97.

13. Mohd Nayab, Mohd Anwar, Tanzeel Ahmad. Effect of Hijamat bila Shurt in the Management of Waja-ul-Mafasil – A clinical Study. Hippocratic Journal of Unani Medicine 2009; 4(3): 1-7.

14. Kuo DT, Tadi P. Cervical Spondylosis. [Updated 2021 May 9]. In: Stat Pearls [Internet]. Treasure Island (FL): Stat Pearls Publishing; 2021 Jan-. Available from: https://www.ncbi. nlm.nih.gov/books/NBK551557/

15. Takagi I, Eliyas JK, Stadlan N. Cervical spondylosis: an update on pathophysiology, clinical manifestation, and management strategies. Dis Mon 2011; 57(10): 583- 91. DOI: 10.1016/j.disamonth.2011.08.024

16. Majoosi A. Kaamilus Sana'ah. Vol. 1st (Urdu translation by GH Kantoori). New Delhi: Idara Kitab-ush-Shifa; 2010.

17. Razi Z. Kitabul Hawi. Vol. XI. New Delhi: Central Council for Research of Unani Medicine, Ministry of Health and FamilyWelfare, Govt. of India; 2004.

18. Que Q, Ye X, Su Q, Weng Y, Chu J, Mei L, *et al*. Effectiveness of acupuncture intervention for neck pain caused by cervical spondylosis: study protocol for a randomized controlled trial. Trials 2013; 14(1): 1-7. doi:10.1186/1745-6215-14-186

19. William NS, Bullstrode CJK, Conell PRO. Bailey & Love's Short Practice of Surgery. 25thed. London: Edward ArnoldPublishers Ltd; 2008.

20. Mattei TA, Goulart CR, Milano JB, Dutra LP, Fasset DR. Cervical spondylotic myelopathy: pathophysiology, diagnosis, and surgical techniques. ISRN Neurol 2011; 2011: 463729. doi:10.5402/2011/463729

21. Harsulkar SG, Khatri SM, Rao K, Iyer C. Effectiveness of Gong's mobilization in cervicalspondylosis: A prospective comparative study. Int J Community Med Public Health 2015; 2(1): 38-44. DOI: 10.5455/2394-6040.ijcmph 20150209.

22. Hirpara KM, Butler JS, Dolan RT, O'Byrne JM, Poynton AR. Non-operative modalities to treat symptomatic cervical spondylosis. Adv. Orthop 2012; 2012: 1-5. doi:10.1155/2012/294857.

23. Maheshwari J, Mhaskar VA. Essential of Orthopedics. 4th ed.New Delhi: Jaypee Brothers; 2011.

24. Miao Q, Qiang JH, Jin YL. Effectiveness of percutaneous neuromuscular electrical stimulation for neck pain relief in patients with cervical spondylosis. Medicine 2018; 97(26): 1- 4. doi:10.1097/MD.0000000000011080.

25. Arzani A. Tibb-e-Akbar (Urdu Translation by Hkm. M Hussain). Deoband: Faisal Publication; YNM.

26. Nafeesi B. Tarjuma wa Sharae Kulliyate Nafeesi (Urdu translation by M Kabeeruddin). New Delhi: Idara Kitab-ush-Shifa; 1954.

27. Mohd Nayab, Abdul Nasir Ansari, Fatima Khan. A Panoramic View of most commonly used Regimenal Modalities (Tadabeer) for Joint Pain in Unani System of Medicine: A Critical Review. J. drug deliv. ther 2021; 11(2):228-231. DOI: http://dx.doi.org/10.22270/jddt.v11i2.4561.

28. Md. Anzar Alam, Mohd. Nayab, Abdul Azeez, Mohd. Aleemuddin Quamri, Abdul Nasir Ansari,

Muscular Dystrophy (Istirkha) and its management through Unani Medicine: A Review, Int. J. Herb. Med 2014; 2(4): 01-04.

29. Mohd Nayab. Ābzan (Sitz Bath)–An effective mode of treatment in ′Ilaj bit Tadbīr (Regimenal Therapy). The Pharma Innovation Journal (International) 2016; 5(12): 45- 49.

30. Izhar Ahmad, Mohd Nayab, Tanzeel Ahmad. Effect of gliding cupping with Roghan-e-Surkh in low backache (Waja-uz-Zahr): a case series study. Drug Metab Pers Ther. 26 March – 2021. DOI: https://doi.org/10.1515/dmpt-2020- 0177.

31. Ansari A, Nayab M, Ansari AN, Saleem S. An Analytical Review on Ancient Regimen: Dalk (Massage) Therapy in Unani System of Medicine. Int. J. Res. Anal. Rev 2020; 7(2):872-878.

32. Ameen F. Role of Ilaj-Bit-Tadbeer (Regimenal Therapy) in the Management of Waja-ul-Unq (Cervical Spondylosis): A Review with Unani Perspective. Int J Adv Res (Indore) 2020; 8(4): 307-11. DOI: 10.21474/IJAR01/10781

33. Ahmed K, Jahan N, Aslam M, Kausar H, Khalid M, Ali H. Dalak (massage) in Unani medicine: a review. J. adv. res. Ayurveda, Yoga, Unani, Siddha Homeopathy 2014; 3(1): 162-74.

34. Bhat MD, Ansari MI, Malik R. Dalk (Massage) in Unani Medicine: An Ancient Regimen for Preventive and Rehabilitative Treatment of Various Diseases. RRJoUSH 2017; 4(1): 19-27.

35. Lone AH, Ahmad T, Anwar M, Akhtar MS. Role of Massage Therapy in the Management and Prevention of Diseases-A Case series of Medicated Massage. Int J Res Ayurveda Pharm 2012; 3(06): 1474-77.