



Review Article

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ROLE OF AYURVEDA IN THE MANAGEMENT OF SPORTS INJURY: A REVIEW

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ABSTRACT

Sports injuries are commonly seen in sportsperson. Sports medicine helps in physical fitness along with treatment and also preventive of injury related to sports, exercise etc. All sports are prone to risk of injuries in one or other form. Varieties of sports injuries are seen in form of bruises, sprains, strains, tear and stress fractures caused when an abnormal stress is placed on tendons, joints, ligaments, bones or muscles. In *Ayurvedic* classics, *Vatadosha* is responsible for all the body movement and when it is vitiated due to the excessive use of particular joint, it cause pain in the affected muscle, joint and ligaments. In sport injuries *Vata dosha* is aggravated due to increased risk of trauma or injury, which may leads to pain in the affected parts. As *Vatadosha* is responsible for any kind of pain in the body, hence in this case *Vatashamak Chikitsa* should be the choice of treatment which includes *Prakritisthapana* with internal medicine or with external therapies like *Lepana*, *Upanaha*, *Aalepa*, to promote tissue healing, *Patrapinda Sweda* in stiffness and pain, along with treatment modalities like *Katibasti*, *Bandhana*, *Agnikarma* and *Raktamokshana*. In various *Ayurvedic text*, the *Marma* mainly considered as fatal points of body in which any trauma may leads to severe disabilities or even death. These *Marma* points can be utilized in wise manner for treatment of various sports injuries.

Keyword: Sports injury, *Panchakarma*, *Ayurveda*, *Bhagna*, *katibasti*, *Marma*, *Vata dosha*, ligament.

INTRODUCTION

In present era physical fitness play very important role in order to avoid different types of disorders such as lifestyle disorder, metabolic disorder, psychological disorders etc. In this context sports and physical exercise play important role in maintaining fitness of body. But there are some limitations of these types of activities, as they can cause different types of injuries which can cause agony to the sports person and further can affect the future as well. Sports injuries are injuries that are seen while engaging in sports activities and various exercises. As a general rule, the more contact with sports, the greater risk of traumatic injury.

Common sports injuries are cuts, sprains, strains, bruises, tear and stress fractures caused when an abnormal stress is placed on tendons, joints, ligaments, bones or muscles. Sport medicine deals with management of such types of injuries with minimal amount of side effects¹.

Classification of sports injuries

Sports injuries are most commonly caused by poor training methods, structural abnormalities, and weakness in muscles, tendons, ligaments and unsafe exercising techniques. The most common cause of injury is poor training to sportsperson. In broader perspective sports injuries can be classified into two major types:

1. Acute injuries
2. Chronic injuries

Acute Injuries

Acute injuries which are seen most commonly are strains and sprains. In this type of injuries most commonly the affected body part are ligament and tendon. In sprains ligaments are affected whereas strains affect muscles and tendons. Ligaments are bands of connective tissue which connect bone to bone and hold various joints together e.g. shoulder joint, knee joint etc. Tendons are bands of connective tissue that connect muscles to bones. A sprain is a stretched or torn ligament, while a strain is a stretched or torn muscle or tendon. The common symptoms seen in sprain and strain are pain and swelling. This provides a great agony to patient. In sprain, there may be bruising or inability in movement of the affected joint. In Strain muscle weakness, muscle spasm and trouble in moving the affected muscle may also be present.

Chronic Injuries

Chronic injury is an injury that persists approximately three to twelve weeks. These type of injuries cumulative trauma that are manifested due to repeated small injuries over the involved body part which result in wear and tear of affected body tissues. Chronic injuries develop slowly and are persistent, or they can reoccur constantly over a long period of time. Chronic injuries have low-grade pain, mild symptoms, and ignored for several months to many years; ignoring such type of injuries; when they are in mild form; can lead to chronic injury that may be difficult to heal in due course of time. The actual cause of chronic injury of musculoskeletal can be an injury, infection, or wear and tear from inappropriate movement over a long duration of time. There are some difficulties while managing the chronic pain or injuries because many times it is of unknown aetiology, and sometimes pain occurs for no apparent reason, with no any acute injury.

Other injuries are traumatic brain injury (TBI), ACL (Anterior cruciate ligament) tear, patella-femoral syndrome (injury resulting from the repetitive movement kneecap against your thigh bone), MCL (medial collateral ligament) injury, shin splints, stress fracture, planter fasciitis, sprained ankle, tennis elbow, low back pain, hip bursitis, Achilles' tendonitis and runner's knee. Sports medicine deals with physical fitness and the treatment of injury of sports person. Hence majority of sports injury are involved with injuries of tendons, ligaments and muscles².

Ayurvedic concept in sports injury

Ayurveda is the ancient science with an aim of prevention of health of healthy person and cure illness. Hence *Ayurveda* can play a major role in field of sports injuries. It can show a path that how a sportsperson can avoid injuries and if one suffers from any injury then it can be managed by minimal invasive technique using various *Ayurvedic* treatment modalities. Direct reference of sports injuries and its management is not mentioned in ancient *Ayurvedic* literature. In India approximately 35% of the population are indulged in various types of sports activities in one or other form. Among them 60% of the sportsperson sustain various injuries in the sports field. 30% of the above are rendered, permanently unfit for further sports life. Moreover, the rest does not fit in perfect manner with existing treatment. In *Ayurvedic* classics, *Vata dosha* is responsible for all the body movement, when it is vitiated due to the excessive use of particular joint, it cause pain in the affected muscle, joint and ligaments. As far as *Vatadosha* is considered for any kind of pain '*Vatadrite Nasti Ruz*'³. In sport injuries due to increased risk of trauma or injury, *Vata dosha* is aggravated which may leads to pain in the affected parts⁴. Treatment modalities in modern science are oral steroidal and non-steroidal anti-inflammatory drugs (NSAIDs) and muscle relaxants which have its side effects in various form. So, prolong use of these drugs cannot be justified in sportsperson. According to fundamental principles of *Ayurveda*, there are seven *Dhatu* (body-tissues) that are involved in body constitution and proper functioning of human body. Among these *Asthi dhatu* form; various sports injuries are involved with *Mamsa* (Muscles), *Asthi* (bones) *dhatu*. Along with this *Snayu* (ligaments), *Kandra* (tendons) are *Upadhatu* which are also involved in it. According to *Ayurveda*, functions of *Asthi* (Bones) are giving structure and shape to our body⁵. Muscles, ligaments, and tendons all are connected to *Asthi*. Having strong bones means having a strong body. Symptoms of *Asthikshaya* and *Asthivridhi* have been described in *Ayurvedic* classics which involve the pathology underlying *Asthi*, *Snayu*, and *Kandra*. Hence concept of *Asthikshaya* and *Asthivridhi* must be taken in consideration while managing various sports injuries.

Symptoms of *Asthivridhi*

- *Adhyasthi* (bony-hypertrophy)
- *Adhidanta* (extra teeth formation)⁶.

Symptoms of *Asthikshaya*

- *Asthibhagna* (pathological fractures),
- *Asthikshaya* (osteoporosis),
- *Asthitoda* (Inflammation of bones and joints)
- *Dwijaprapatana* (falling of teeth)
- *Shrama* (fatigue).
- *Sandhisaitihilya*^{7,8}

Sports injury as per *Ayurveda*

Concepts of sports injuries and their management can be understand in the *Ayurvedic Samhitas* under following headings

- *Bhagna* (fractures and dislocations),
- *Sadyovrana* (acute wounds) etc.
- *Snayugata Vaata* (tendon and ligament injury)
- *Vrana* (wounds).
- *Vranashotha* (inflammatory conditions).
- *Kandaragatvata*
- *Mamsagatvata*
- *Sandhimukta*
- *Snayugatvata*
- *Marmagatavata*⁹

Concept of *Snayu Marma*

Snayu Marma, is one of the important vital points which needs protection. Clinical manifestations such as in sciatica and paralysis, the function of the ligaments impaired along with tendons and blood vessels occurs¹⁰.

Snayugata-vata or *Vatavrit snayu roga*

Vatavrit snayuroga or *Snayugata-vata* is a characterised by fatigue and musculoskeletal pain which is seen commonly in 5% of the total population. When *Snayu* is effected by vitiated *Vata* it causes symptoms of *Bahya aayam*, *Abhyantara aayam*, *Khaliroga*, *Sarvaangvata* and *Kampavata*¹¹.

Types of ligament as per *Ayurveda*

In *Ayurveda* *Snayu* has been coated as *Vaatavahini nadi*. According to their shape, size and anatomical position, four types of *Snayu* have been described in *Ayurvedic* anatomy

1. ***Pratanavati Snayu***
These are branched and are present in all joints of the body and extremities.
2. ***Vrutha Snayu***
These are circular in nature and also known as *Kandra*.
3. ***Sushira Snayu***
Porous in nature, situated in the end part of stomach, intestines and urinary bladder
4. ***Pruthu Snayu***
Flat in shape, located in the head, chest, back and sides.

These *Snayu* are mostly involved in various types of acute and chronic injuries to the persons involved in different sports activities, exercises and excessive physical exertion. Among above four types of *Snayu* described in *Ayurvedic* classics, *Pratanavati Snayu* and *Vrutha Snayu* are more involved in sports injuries¹².

Treatment modalities in *Ayurveda*

Ayurveda as a sports prescription is a moderately new idea. Although old India depended upon this framework to treat and keep up the prosperity of its warrior people and it centres on the wellbeing parts of sports individual, for example, their standing adaptability and perseverance. It isn't just remedial and rehabilitative yet additionally preventive like with normality and peaceful. *Prakritisthapana* with internal medicine or with external therapies like: *Lepana/Aalepa/Upanaha* to promote

tissue healing, *Patrapinda Sweda* in stiffness and pain, *Katibasti*, *Bandhana*, *Anusandhan karma* (*Agni karma* and *Raktamokshana*). In the present period its connected viewpoint, that is, incitement of these *Marma* by methods for *Abhyanga* (rub), *Mardana* (Acupressure), Aroma treatment, *Lepa* (herbs application on body), *Parishek*, *Raktamokshana* and *Agnikarma* (heat application) is used to treat illness.

Sheet and Ushna Chikitsa

As a general rule if a person is having acute injury that is not open type various treatment modalities having *Sheet* effect can be used in treatment protocol. In contrast the therapy having *Ushna* effect should be used in chronic type of injuries.

Prakritisthaapana

To recapture physical wellness of a sports individual and send him back to the field as right on time as conceivable by insurance, rest, drug and physiotherapy.

Internal medication

1. Enhance tissue healing,
2. Alleviate pain
3. Give strength to injured part.

External therapies

1. To alleviate pain
 2. Strengthens joints
 3. To improve work
- i. Use of *Lepana/Aalepa/Upanaha*- To alleviate pain and to advance tissue healing.
 - ii. *Kati Basti*: It is very useful in back ache and muscular pain.
 - iii. *Bandhana*: Bandage can be used with or without oil massage. In *Ayurvedic* literature, 15 types of *Vrana Bandhana* are mentioned.
 - iv. *Patra potli sweda*-
 - v. *Anushastra Karma*: These incorporate Para Surgical Procedures including *Agnikarma* (direct warmth application) and *Raktamokshana*: (Bloodletting therapy). Both decrease irritation, alleviate pain and promote healing¹³.

Role of Marma Chikitsa

Marma Chikitsa, a treatment polished by few professionals to animate these *Marma* points by applying pressure, squeezing ligaments, vibrating or use of hot and cold pastes, oils and ointment on *Marma* relying upon the kind of *Marma* had developed as new measurement in non-pharmacological treatment of *Ayurveda*.

Rasayana therapy

The physical and mental stamina of sportsman show ideal wellbeing with *Tridosha* and *Saptadhatu* in their ordinary condition. Anyway for *Dhatupachaya* and *Balavridhhi* (Strength) normally the *Rasayana* treatment is most appropriate and can be embraced during the training programme. For useful purposes *Kuti Praveshika* (Indoor) kind of *Rasayana* is recommended¹⁴. Single *Rasayana* or plan of different such medications can be recommended for general wellbeing, and explicit details are demonstrated by picking such *Rasayana* to improve the *Snayu* and *Mamsadhatu*. They might be chosen according to the need and individual state of the sportsman from the accompanying:

Ashwagandha (*Withania somnifera*) *Musali* (*Chlorophytum Borivilianum* L.) and so on.

Role of Yoga

Yoga plays very important role in sportspersons. In *Yoga Asanas*, *Pranayama*, *Suryanamaskaara* and Meditation are performed by sportspersons for many purposes. It improves health of bones while strengthening spine and muscles. It also acts on tendons and ligaments by making them less prone to breakdown. It also improves the flexibility. In shoulder and knee injury *Yoga* poses should be performed which are beneficial to erect the posture such as *Tadasana*, *Vrikshasana*, *Ardhachakrasana*, *Katichakrasana*, *Trikonasana*, *Padahasthasana* etc. While in back pain, *Yoga* poses such *Dhanurasana*, *Bhujangasana*, *Shlabhasana*, etc are found effective which performed in laying position. *Ayurveda* can give best health via *Dinacharya*, *Ritucharya* and *Panchakarma* and keep them healthy, even in trauma like condition *Raktamokshna* is best, which give instant relief from pain specific area¹⁵.

Pathya and Apathya

Ayurveda has the concept which promotes the healthy living like with necessary activities to be done in a day, to avoid fast food and take proper sleep. In dietary habits, lunch should be the primary meal of the day, where breakfast and dinner are far smaller meals. Regularity of meals is necessary for good health and should not skip the meal. Almond milk can be used as an energy drink. *Ayurveda* recommended *Rasayana* including *Amlaki Churna* which improves immunity and muscle building mechanism. By avoiding salty, sugary, oily and heavy food and increasing intake of whole grain bread, cereal, meat and legumes. One should follow the eating rule mentioned in *Ayurvedic* literature named as "*Asthaaharvidhivishesayatan*" including (*Prakriti*, *Karan*, *Samyog*, *Rashi*, *Desha*, *Kala*, *Upyogsamtha*, *Upyokta*) for good health¹⁶. Use seasonal purification process to detoxify the body periodically with *Panchakarma* and therapies are done on the basis of their occurrence they is acute or chronic. *Panchakarma* is getting popular due to its instant magical results and or event recurrence of disease. In sports field person need daily exercise (*Yoga*).

CONCLUSION

In ancient times many *Ayurvedic* treatments and herbal preparations were used by the warriors to enhance their performance during war. These herbal preparations help in increasing stamina, preventing injuries, cure and rehabilitation of injured muscle, bone. They also help in speeding up the process of healing, even after a surgery. Strength is not the only factor that is needed for being a good sportsperson. Along with strength, calmness of mind is also needed for good performance. *Ayurveda* with combination of *Yoga* (*Asana*, *Pranayama*, meditation) has a very good result on an athlete's physical as well as psychological problems. It helps in increasing concentration, good focus and reducing fear, anger, anxiety etc.

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