

Original Article

Overuse Injuries in Children: A Homoeopathic Approach

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ABSTRACT

The increasing participation of children in organized competitive sports has led to a rise in overuse injuries, posing risks of limb deformity and impairment. This article explores the diagnostic, prognostic, and therapeutic applications of HOMOEOPATHY in addressing overuse injuries in children. Overuse injuries result from repetitive strain on musculoskeletal structures, particularly prevalent during periods of physical growth and immaturity. Common injuries include stress fractures, traction apophysitis, and chronic physeal damage. In the Indian context, lack of awareness and inappropriate self-treatment exacerbate these injuries. Recognition of warning signs, such as persistent soreness, is crucial for early intervention. Rehabilitative approaches involve rest, gradual strengthening, and attention to flexibility. HOMOEOPATHY offers personalized remedies targeting specific musculoskeletal entities, aiding in recovery and preventing recurrence. Remedies such as *Rhus Toxicodendron*, *Ruta*, and *Bryonia* address tendon and joint issues, while *Arnica montana* and *Symphytum officinale* target trauma-related injuries. Individualized homeopathic treatment, alongside appropriate rehabilitation regimens, facilitates faster recovery from overuse injuries in children.

Key words: Overuse injuries, Children, Paediatric sports injuries, Homoeopathy, Youth athletes, Personalized treatment, Injury prevention

A significant rise in the number of kids playing organized competitive sports has resulted in an increase in the number of acute and overuse injuries. Paediatric physicians must be knowledgeable with common patterns of overuse injuries in children in order to prevent future consequences, such as limb deformity and impairment. The three main overuse injuries commonly seen in study of overuse injuries in children are stress fractures, traction apophysitis, and chronic physeal damage [1]. This article focuses on the diagnostic, prognostic, and therapeutic applications that is available in Homoeopathy to help reduce the strain and prevent morbidity in children.

WHAT IS OVERUSE AND CONSEQUENCES OF OVERUSE IN CHILDREN

Overuse injuries are a common thing among elite athletes' due constant strain over the joints and musculature surrounding it due to lack of recovery period during intense training sessions, but it can more so happen in these young population due to the immaturity of the skeletal structure and imbalance in muscle strength and flexibility with a high physical growth rate during this phase of life. The normal shape and growth of the long bones are determined by the balance between endochondral

and intramembranous ossification. The longitudinal growth of the long bones is caused by endochondral ossification, a highly organized process of bone production in the physis employing a cartilaginous model. The development of bone at the physis and the calcification of the cartilaginous matrix are facilitated by metaphyseal vascularity. Damage to these structures can result in angular abnormalities and growth stop, as well as impair the bone's capacity to expand longitudinally [1].

Early adulthood is a very physically taxing period as children tend to get more involved in physical activities of sports and doing physically strenuous acts to gain validation from the peers without much thought on the strain to the musculoskeletal structures and adding to it is the physiological stress of growth spurts happening in the body during this phase of life. This leads to a variety of overuse injuries such as jumper's knee, Little leaguers elbow or shoulder, osteochondritis disease, spondylosis, spondylolisthesis and sever's disease (heel pain) [2]. There are also reports of female athletes having functional hypothalamic amenorrhoea due to the high physical strain and overuse [3].

AIM

To show how Homoeopathy can be an effective treatment method for the overuse injuries and athletic injuries occurring in children.

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Access this article online

Received – 29th June 2024

Initial Review – 19th August 2024

Accepted – 7th September 2024

Quick response code

Table 1: Common Overuse Injuries in Children and Their Causes

Type of Overuse Injury	Symptoms	Possible Cause
Sever's Disease	Heel pain with limping, especially after running	Repetitive running or jumping that causes the Achilles tendon to pull on the heel bone.
Little Leaguers' Elbow or Shoulder	Pain in the elbow or shoulder, particularly after activity	Repetitive overhead throwing movements that cause damage and inflammation to the growth plates in the arm bones.
Jumper's Knee (Patellar Tendonitis)	Tenderness just below the knee or in the upper shin	Repeated strain on the patellar tendon in the knee joint, leading to inflammation and pain, especially from jumping.
Spondylosis	Back pain	Excessive flexion and extension of the lower back, commonly seen in football linemen, gymnasts, and ice skaters.
Shin Splints	Pain and tenderness along the shin	Excessive running, hard surface running (concrete), and improper footwear often lead to shin splints.
Sinding-Larsen-Johansson Disease	Knee pain, especially after jumping activities	Caused by a kneecap fracture from repetitive extension on the patellar tendon, pulling the tendon away from the bone.
Osteochondritis Dissecans	Knee pain and swelling	A fragment of cartilage in the knee joint separates from the joint surface, possibly due to genetic or metabolic factors.
Spondylolisthesis	Back pain	Excessive flexion and extension of the lower back causing one vertebra to slip forward on the vertebra below it.

METHODS

Methods - Used in Homoeopathy to Understand the Overuse Injury and its Treatment:

PROBLEM IN INDIAN CONTEXT

All these physical strains cause a lot of distress to these young adults, but initially due to lack of awareness they tend to ignore the distress and continue overusing which leads to pain and lack of mobility and hinder range of motion. This is where the problem starts, children who get aware at this point comes in to consult a physician but in many cases due to unawareness from children and lack of supervision from parent's side, they tend to procrastinate consulting by administering over the counter NSAIDs to overcome the pain and use inappropriate bandaging and sports goods to overcome mobility issues without addressing the underlying cause of overuse and inappropriate rest, leading to further damage to the joints and musculature.

CAUSES OF OVERUSE INJURIES IN CHILDREN

Children are joining organized sports and training programs at progressively younger ages. This early involvement, along with rigorous training routines and the tendency to specialize in a single sport, greatly elevates the likelihood of overuse injuries. The main contributors to these injuries include:

Repetitive Motion: Performing the same movements repeatedly places stress on the same muscle groups and joints, resulting in microtraumas.

Intense Training Regimens: Frequent training sessions without sufficient rest can hinder the body's ability to heal minor injuries, potentially leading to more severe problems.

Early Specialization: Concentrating on one sport throughout the year heightens the risk of repetitive stress injuries.

Growth Spurts: Periods of rapid growth can change biomechanics, increasing children's vulnerability to injuries.

HOW TO RECOGNISE OVERUSE AND REHABILITATIVE APPROACH TO AVOID IT

When it comes to overuse injuries the warning signs are persistent soreness and pain of more than 4 on a VAS during a sports regimen or an intense activity [4]. Any activity which suddenly have become more taxing is causing an overuse to the musculoskeletal system. Any warning signs as mentioned needs to be dealt with immediate resting for brief period and reducing the intensity and gradually gaining back strength by properly training the muscles and ligaments surrounding the joints. Appropriate warm up and warm down regimen before and after activity, giving equal attention on flexibility and mobility as strength is important [5]. In case of any inflammation rest and ice the area initially and avoid re-injury to the same area recurrently and lastly avoid any further use of the part until full recovery.

HOW HOMOEOPATHY CAN HELP IN RECUPERATION OF THESE INJURIES

Homoeopathy helps the children in recovery from the injuries caused by overuse as well as, helps in overall strengthening and helps in clearing out the disposition to such injuries with its remedies. There are many different homeopathic remedies

each acting on different entity of the musculoskeletal system such as joints ligaments and tendons.

RESULTS

Arnica Montana

Indications: Arnica is one of the most used homeopathic remedies for injuries. It is particularly effective for muscle soreness, bruising, and inflammation resulting from overexertion and trauma. Athletes often use Arnica to reduce pain and swelling associated with overuse injuries [6].

Rhus Toxicodendron

Indications: This remedy is beneficial for conditions characterized by stiffness and pain that improve with movement and worsen with rest. Rhus tox is particularly suitable for tendinitis and bursitis where the affected area feels better after initial movement but stiffens up after periods of inactivity [7].

Ruta graveolens

Indications: *Ruta* is indicated for injuries involving tendons and ligaments. It is particularly useful for conditions like tendinitis and sprains where there is a sensation of bruising and lameness. This remedy is also effective in promoting the healing of bones and connective tissues [8].

Bryonia alba

Indications: *Bryonia* is suitable for conditions where pain is aggravated by movement and relieved by rest. It is particularly helpful for joint and muscle pain that worsens with the slightest movement [9].

Symphytum officinale

Indications: Known as "knitbone" *Symphytum* is particularly effective for promoting the healing of fractures and bone injuries. It is also used for periosteal injuries where the covering of the bone is affected [10].

ADJUVANT MEASURES TO BE TAKEN ALONG WITH THE MEDICATION

Varied Training: Promoting involvement in multiple sports or activities to prevent repetitive stress on the same muscle groups.

Rest and Recovery: Providing sufficient rest periods between training sessions to facilitate muscle and tissue repair.

Correct Technique: Instructing proper techniques and ensuring adequate training to reduce unnecessary stress on growing bodies.

Incremental Progression: Slowly increasing the intensity and duration of physical activities to allow the body to adjust.

Table 2: Homeopathic Remedies Commonly Used for Overuse Injuries in Children

Remedy	Indications	Specific Conditions
Arnica montana	Muscle soreness, bruising, inflammation	Muscle strains, bruises, post-exercise pain
Rhus toxicodendron	Stiffness, pain relieved by movement, worse with rest	Tendinitis, bursitis, muscle stiffness
Ruta graveolens	Bruising, tendon and ligament injuries	Tendinitis, sprains, connective tissue injuries
Bryonia alba	Pain aggravated by movement, relieved by rest	Joint pain, muscle pain
Symphytum officinale	Promotes healing of bones, injuries	Fractures, bone injuries

CONCLUSION

The rise in organized sports participation among children has led to an increase in acute and overuse injuries, necessitating heightened awareness and preventive strategies among pediatric physicians. Overuse injuries, such as stress fractures, traction apophysitis, and chronic physeal damage, can have long-term consequences if not addressed promptly [11]. The primary causes include repetitive motion, intense training, early specialization, and growth spurts. Recognizing early signs and implementing rehabilitative measures like rest, proper training, and warm-up routines are crucial for preventing further damage. Homeopathy offers a supportive role in managing overuse injuries, with remedies like Arnica montana, Rhus toxicodendron and Ruta graveolens aiding in recovery and strengthening musculoskeletal health. Adjuvant measures, including varied training, sufficient rest, proper techniques, and gradual progression, are essential for holistic recovery and injury prevention in young athletes.

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How to cite this article: Ravi Raghul.G, Shivaprasad J. Overuse Injuries in Children: A Homoeopathic Approach. *Indian J Integr Med.* 2024; Online First.

Funding: None;

Conflicts of Interest: None Stated