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Role of Pranayama In The Treatment of Backpain

Dr.Sonu Sadanandan*

*M.D Scholar, Dept. of Sharira kriya, NIA Jaipur.

Abstract:

Vertebral column is the backbone of our body and supports the remaining part of skeleton. Certain etiology factors creates problem in vertebral column and produces backpain. Nowadays Backpain is the most common disease prevalent among people. Excessive labour, prolonged sitting for computer works, bad posture while working or sleeping, menstrual problems, some cases of pregnancy are the leading causative factors of backpain. Sleeping bed also plays important part in developing or reducing the backpain. Pain occurs posteriorly in the region between the lower rib margin and the proximal thighs. Pain can vary from a dull constant pain to a sudden sharp feeling pain. Backpain may be specific or non – specific. Non specific backpain is common which do not have specific pathology. The treatment for backpain in Ayurveda is proper internal medication and panchakarma therapy for a specified time period. We can also adopt Yoga and Pranayama as a conservative treatment for backpain. Yoga is a part of Ayurveda designed to bring physical, mental, emotional & spiritual health dimensions of the individual. Pranayama is the formal practice of controlling the breath. Physical or emotional stress causes breathing to be shallow, which leads to more stress because it puts less oxygen in to the blood stream and increases muscle tension. Breath is a way to calm our nervous system. Extending the exhalation so that it is no longer than the inhalation reduces the resting level of sympathetic nervous system so that the parasympathetic nervous system can conserve energy & can feel more relaxed. The aim of this work is to study about the regular practice of Pranayama which includes Ujjayi Pranayama, Dirga Pranayama, Naadi shodhana Pranayama, Shitali Pranayama, Bhramari Pranayama which could reduce the backpain. Practice of Pranayama nourishes the whole body with oxygen and efficiently expels the carbon dioxide thereby removes the toxins from body. Hence if we can spread the benefits of Pranayama in society we can reduce the occurrence of backpain.

Keywords: Backpain ,Yoga, Pranayama

INTRODUCTION

Back pain is the physical discomfort occurring anywhere on the spine ranging from mild to disabling. The highest rate of backpain occurs among the 45-64 age group. The incidence of backpain is greater in women(1)Nowadays IT Professionals are major group suffering from backpain problem due to prolonged sitting. In *Ayurveda* it is known as *Katigrahana / Prishtasoola* is the indication of *vata dosha* aggravation and bone & muscle weakness(*asthi dhatu kshaya & mamsa dhatu kshaya*)(2). The human back is composed of a complex structures of muscles ,ligaments, tendons, disks and bones which work together to support the body & enable us to move around. The segments of the spine are cushioned with cartilage-like pads called disks. Problems with any of these components leads to back pain. Frequent causes of back pain are strained muscles or ligaments, muscle spasm, muscle tension, damaged disks, injuries, fractures or falls, lifting

heavy materials, overstuffed bag, overdoing gym, making an awkward movement etc. Spinal disk diseases occurs when the nucleus pulposus, a gel like material in the inner core of the vertebral disk, ruptures. Rupturing of the nucleus pulposus can lead to compression of nerve roots. Symptoms may be unilateral or bilateral and correlate to the region of the spine effected. The most common region for spinal disk disease is at L4-L5 or L5-S1(3). The risk for lumbar disc disease is increased in overweight individuals due to the increased compressive force on the nucleus pulposus. The symptoms of backpain are muscle ache, shooting or stabbing pain, pain that radiates down the leg, pain that worsens with bending, lifting, standing or walking. Pain that occurs suddenly and lasting for six weeks caused by a fall or lifting is due to muscle strain is acute pain and more than three months is chronic pain. Treatment methodology followed are internal medications and *panchakarma* treatments. *Ayurvedic* treatments aims at bringing the vitiated *dosha* back to the state of equilibrium and thereby establishment of health. External treatments *Abhyanga* (oil massage) and *basti* (medicated enema) are very much helpful in relieving back pain and correcting abnormalities(4). Yoga and pranayama can be applied as a preventive and conservative treatment for back pain.(5). The process by which the psychic prana is controlled by the regulation of external breath is called Pranayama. The present paper reviews the role of pranayama in the treatment of back pain.

MATERIALS AND METHODS

For the present review related information are taken from *Ayurvedic* textbooks, Modern textbooks, Journals, Internet etc.

PRANAYAMA

The Sanskrit word pranayama is composed of two parts *Prana* and *Yama*. *Prana* means 'life force' and *Yama* means 'lengthening/restraint'. Consists of four stages-(a)*Puraka*-inhalation,(b)*Abyanthara kumbhaka* -the mindful pose after inhalation(c)*Rechaka*-exhalation(d)*Bahya kumbhaka* -the mindful pose after exhalation. *Pranyama* is one among the eight-fold holistic process defined as yoga(6). The *Atharva veda* has compared the relation of *Prana* with the world of living beings to that of a father with his son. It is the sum total of all the energy that manifest in the Universe, in nature and within each one of us. Heat, light, electricity and magnetism are its manifestations. Whatever moves or works or has life is only *Prana*. It can be seen in the movement of the heart, in the respiratory function of the lungs, in the digestion of food, in the opening and closing of the eyelids, in walking, thinking, playing feeling and reasoning. In other words in a human being, *Prana* becomes visible on the physical plane as motion and action, and on the mental plane, as thought. *Prana* is the force which connects consciousness and matter. When it is withdrawn, the astral body separates from the physical body and it is called death. *Pranayama* is not only breath control but the control of the muscular force acting the lungs. By controlling the breathe, the external manifestation of *Prana*, we can control the subtle life force within. Breathing is the most important of all the bodily functions. We can live for weeks without food, days without water, but not even a few minutes without air. It is very important to have correct breathing habits if we want to live a life of continued vitality and to be free from disease. There are eight different types of *Pranayama* beneficial for various bodily ailments. In this review study, five *Pranayama* which helps in treatment of backpain is studied in detail-Nadishodhana pranayama, Ujjayi pranayama, Deerga pranayama, Shitali pranayama, Bhramari pranayama.

NADI SHODHANA PRANAYAMA

Breathing is done alternatively through the nostrils. Also known as *Anuloma viloma* in certain texts. Works at both physical and mental levels. It is a *Hatha yoga Pranayama* that purifies the body energy channel /*Nadis*.

Procedure – Sit in a *padmasana* pose. Watch the breath for a minute with full concentration. Now lift the right hand and keeping the palm open close the middle & index fingers only- this is the *Vishnu mudra*. Close the right nostril with the thumb & without straining exhale as much air as possible slowly through the left nostril. At the end of the exhalation slowly without any jerks start inhaling through the same left nostril, Take a deep long slow and steady complete breathe. At the end gently change nostrils by closing the left nostril with the ring and little finger and releasing the thumb. Slowly exhale through the right nostril till you feel that the lungs are empty. A slight contraction of the abdomen toward the end of the exhalation helps to expel the maximum amount of air .Now repeat this practice breathing in from the right nostril and expelling through the left. This makes one round of alternative breathing. The full cycle can be repeated up to 10 times. An advanced version of *nadi shodhana pranayama* involves holding the breathe for longer amounts of time. In this variation ,the practitioner inhales for a count of four,retains the breathe for a count of 16,exhales for a count of 8 ,and holds the breathe out for a count of 16.

Benefits – Balances the parasympathetic and sympathetic nervous system to cultivate a state of internal tranquillity, stability and peace of mind(7).

UJJAYI PRANAYAMA

This *Pranayama* also known as the ‘Victorious Breathing’ for *jaya* means victory. It is an energy giving *pranayama*. Distinctive feature is that the glottis is partially closed during inhalation and exhalation,producing an audible sound.

Procedure – Sit in any meditative posture ,preferably *Padmasana*. After a complete exhalation inhale slowly and evenly while contracting the throat ie. partially closing the glottis so that a continuous soft, hissing sound is audible. This sound should be of even pitch and intensity throughout. This partial closure means that the air which enters more slowly, is heard as well as felt ,due to which better regulation of the breathe is possible. Avoid friction in the nose. Inhale expanding the lungs to full capacity. The abdomen is kept slightly contracted throughout and the thoracic cage is expanded fully, a different emphasis from that of the complete Breathe. Perform *Jalandhara bandha* and hold the breathe comfortably for a few seconds. Then release the *bandha* ,close the right nostril with the thumb of the right hand and exhale slowly through the left nostril. Again the glottis is partly closed and you hear the regulated sound as the breathe flows out. In *Ujjayi* ,inhalation is through both nostrils &exhalation is through the left one. Once perfected ,this *pranayama* can be done even while standing ,walking or lying down.

Benefits – Increases vital capacity, richly oxygenate and purifies the blood, broadens the chest, tones the nervous system(8).

DEERGA PRANAYAMA

Yogic breathing exercise that involves filling the lungs as much as possible using the entire respiratory system. The term *deerga* means ‘long’, prana means ‘life force’ and yama means

To extend or draw out. Most basic of yogic breathing exercises and one upon which other breathing practices are built.

Procedure – Sit in a comfortable pose with a straight spine and abdomen that is not compressed. The breathe fills up from the pelvis to the shoulder on the inhale and empties in reverse order on the exhale. Begins with relaxation of abdomen ,which expands in all directions on an inhale. After the pelvis and abdomen fill ,the chest expands passively as the breathe fills it, then the collar bones lift and expands as the breathe fills that area. When the lungs have filled ,the yogi takes in a little more air through the nose ,then exhales from the top of the lungs to the abdomen in reverse order of the inhale, finally contrasting the abdominal muscles to remove all air.

Benefits – Balances the *prana* energy, increases focus and concentration, relaxes the nervous system, reduces stress and anxiety, relieves insomnia, builds stamina(9).

BHRAMARI PRANAYAMA

Action of making a light humming sound while practising *pranayama*. *Bhramari* is a Sanskrit word derived from *bhramar* (humming bee).

Procedure – Practised in a comfortable seated position such as *padmasana*. In a four or six count breathing pattern, the yogi makes a humming sound similar to the buzz of a bee during the exhale of the breathe. Once the sound on the exhale is mastered, a sound can also be attempted during the inhale.

Benefits – Alleviates stress anger tension in the mind, alleviates insomnia and anxiety, beneficial for body and mind(10).

SHITHALI PRANAYAMA

Breathing exercise designed to both calm the mind and cool the body. The term *shitali* means ‘cooling’/smoothing, *prana* means ‘life form’, *ayama* means ‘extention’.

Procedure – To practise *shitali pranayama*, the tongue is rolled and then the breathe is drawn sin through the tongue as if through a straw.

Benefits – Benefits the nervous system and endocrine glands, useful in hot weather, for *pitta dosha vikrita avastha*, due to cooling effect relieves stress, regulate the body temperature and still the mind after asana practise(11).

Conclusion

Developing an awareness of breathing, its rhythm and rate can actually help in curing back pain. *Pranayama* is an excellent therapy for healing sore and injured back muscles, reducing recovery time, preventing re – injury and reducing the risk of disability from backpain. *Yoga* helps alleviates lower backpain by strengthening and stretching the muscles of the lower back, reducing inflammation and increasing circulation of blood & *prana*. Regular *yoga* practise improves posture and body mechanics, relieving pain and preventing injury by keeping the spine in proper alignment.

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