

Effect of *Withania Somnifera* Supplemented Product on Musculoskeletal Stress/Pain—A Study on Women (24-45 Years)

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Ayurveda is the science that advices us how to maintain life. Hence the term ayurveda means the science of life. “Ashwagandha improves the response to stress, possibly via an action on the adrenal glands, and also has anti-inflammatory and sedative effects. Ashwagandha is used to treat nervous exhaustion, insomnia and malnutrition”. To study the prevalence rate of musculoskeletal pain/ stress. The factors that initiate musculoskeletal growth are not known. The vast majority of musculoskeletal pain occurs in women. In most women with pain, the condition is painful. If symptoms do appear, they usually take the following forms:

- ❖ Weakness and decreased energy.
- ❖ Tired & Fatigue.
- ❖ Back pain.
- ❖ Cervical pain.
- ❖ Depression & sadness.

The present study has been under taken to significance of beverages (banana shake & lassie) on musculoskeletal pain & observes the effect of its supplementation on their musculoskeletal pain (back pain and cervical pain).

The term Ayurveda is the combination of two words aayus and Veda. Aayus means life and Veda means knowledge or science. Ayurveda is the science that advices us how to maintain life. Hence the term ayurveda means the science of life. Nutrition is a major aspect of this traditional system. Ayurveda promotes significant lifestyle

change, including diet, exercise, meditation and bodywork. (Sihag , 2013)

ASHWAGANDHA: NATURE AND CHARACTERISTICS

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<http://AshawagandhaHealthBookSummaries.com.htm>

GENERAL INFORMATION

Withenia somnifera is a therapeutic herb. This herb is known by several names such as “Varah karni”, Bajigandha and Ashwagandha. It is called Ashwagandha because its raw root gives horse like smell. It is also said that since its use makes one full of strength and vigor like that of a horse it is given the name of Ashwagandha. When dried, its root loses its bad smell.

This herb is found in the whole of India including western part, Madhya Pradesh, Maharashtra, Gujarat, Punjab and the hills in the north up to the height of 5000 feet. It is grown and cultivated in the district of Mandsor of Madhya Pradesh at a large scale; and from there it is supplied as a commercial product in the whole of India it is also cultivated in the district of Nagor of Rajasthan from where it is supplied to many other places in India. For this reason it is also given the name of Nagori Ashwagandha. The plant of Ashwagandha is 1 to 4 feet high.

Ashwagandha is an erect branched shrub with greenish or lurid yellow flowers. The plant is distributed throughout the drier subtropical regions of India (Burt, 1980).

Ashwagandha is of two kinds: 1). Small and 2). Big. The plant of small Ashwagandha is not long but its root is big and thick. The other one is big earlier called Nagore Ashwagandha or desi Ashwagandha, Only root of Ashwagandha is used for medicinal purposes.

MEDICINAL IMPORTANCE

WHO (World Health Organization) defines a medicinal plant as any plant which, in one or more of its organ, contains substance that can be used for therapeutic purpose or which is a precursor for synthesis of useful drugs.

The plants that possess therapeutic properties or exert beneficial pharmacological effects on the animal body are generally designated as "Medicinal Plants". It has now been established that the plants which naturally synthesize and accumulate some secondary metabolites, like alkaloids, glycosides, tannins, volatile oils and contain minerals and vitamins, possess medicinal properties. (Akhtar, 1997)

In ayurveda Ashwagandha is considered a very important herb right from the ancient times. It is considered a tonic of very high quality. Acharaya Charak was of the opinion that Ashwagandha is a tonic of very high quality. It is an effective medicine in all kinds of chronic diseases and also in case of T.B. According to Sushrut, Ashwagandha has curative value in all kinds of weaknesses and degenerative diseases. As said by Charak fifteen days therapeutic use of Ashwagandha in milk, ghee or oil makes a child healthy and strong. Also he said that an old man using Ashwagandha in winter season for a month he grows young with full vigour.

According to Wealth of India, Ashwagandha has a therapeutic value for children. It is considered a well known ancient rural herb

for various ailments of children like- body pain, weakness etc.

In unani medical practice Ashwagandha is called BAHMANEVARI and herbs Ashwagandha is its well known preparation used in treating several diseases. Its use removes weakness and makes one strong and healthy.

MODERN AND SCIENTIFIC VIEW

Most important research work on Ashwagandha has been done Ashwagandha enlarged to be antiageing in a research on its use in case of 101 male old people aged 50-59 years. In this research every man was given 1gm Ashwagandha powder three times in the day for one year in milk. As compared to the control group the experimental group was found to have increased level of haemoglobin and red blood cells, also those with bending back could walk straight and their joints become more flexible. They found that blood cholesterol decreased, ESR reduced. It has also been found that Ashwagandha is a haemotonic herb. It is maintained that iron along with free amino acids found in Ashwagandha make this a good haemotonic herb. (Kuppurajan, 1980)

It can enhance the immune system by boosting macrophages and phagocytes. These are immune cells that literally gobble up invading bacteria, viruses and malignant cells. It can also increase red blood cells and white blood cells and boost platelet count. Platelets are small bodies in the blood that help your blood to clot. It can also help alleviate anemia. Its ability to reduce spasms in the lungs has made it of use to those suffering from coughs, emphysema, bronchitis and asthma. It serves as both an aphrodisiac and aid to impotence. It can boost fertility by increasing sperm count and nourishing females. Ashwagandha anti-inflammatory properties have made it helpful for both rheumatism and arthritis. It is used to alleviate stress and insomnia, regulate blood pressure and cholesterol. Ashwagandha has also been

used in a study on Alzheimer's disease and was found to improve cognitive skills and memory.

Ashwagandha has a long medicinal history stemming back 4000 years. Ashwagandha, a holistic herb used to treat a variety of ailments, improves the total body's ability to maintain physical effort and helps to get the body relieve stress, fatigue and sleeplessness. Loosely translated it also means the "strength of 10 horses". Ashwagandha helps the body adapt to stress, but it also rebuilds the nervous system without stimulating it. Ashwagandha is rich in phytochemicals such as, withananine, choline, trapino, and alkaloids. (Burt,1980) Withanolides possess remarkable antibacterial, antitumor, anti arthritic and immunosuppressive (Elsakka, 1989).

Jain et al. (2001) reported that treatment with *Withania somnifera* root powder extract significantly reduced (80%) the number of degenerating cells in stress effected female Swiss albino rats. The study demonstrates the antistress neuroprotective effects of *Withania somnifera*.

CHEMICAL STRUCTURE

Several alkalides are found in the roots of Ashwagandha. The total quantity of these is found to be 0.13to 0.31 %. According to Wealth of India, 1980 13 alkaloids have been separated by the method of chromatography. A few more have been known to be there According to German and Russian scientists, in its leaves of Ashwagandha plant scientists have found 12 kinds of different vidonolide. Apart from this there are alkaloids, glycosides, glucose and free amino acids which are also found in large amounts containing good amount of calcium and phosphorus with little fibre. In the root, stem and fruit the scientists have found tannin and flavonoids also.

Ashwagandha helps maintain proper nourishment muscle and bone, while supporting the proper function of the adrenals and reproductive system. Ashwagandha has

powerful antioxidant properties that destroy free radicals implicated in aging and numerous diseases. Also remarkable, emerging evidence suggests that Ashwagandha has anti-cancer benefits. Used by both men and women, it acts to calm the mind and promote restful sleep. As an adaptogen, it improves health for people troubled with a poor diet, lack of sleep, mental or physical strain, or chemical and environmental poisons. It is especially beneficial in arthritis, hypertension, diabetes, and chronic stress-debility. (Priyadarshini, 2010).

HEALING PROPERTIES OF ASHWAGANDHA

Listed below are a few healing properties of Ashwagandha

- **Stress**
- **Insomnia**
- **Digestive problems**
- **Cold and cough**
- **Eye problems**
- **Brain tonic**
- **Libido enhancer**
- **Women's problems**
- **Impotency**
- **Piles**
- **Blood purifier**
- **Ease arthritis pain**
- **Back and neck pain**
- **Fight depression and mood swings**

Back and neck pain

More than 80 percent of us experience back pain, at least, once in life. The fact is that it is neither inevitable nor incurable. Back pain is largely preventable. It is, in fact, a lifestyle disease. Science and technology have given so many gadgets to us that today our muscles do not have to work much and, therefore, remain weak. Weak muscles of the back and abdomen predispose us to back pain. Further these weak muscles are inappropriately used while sitting for too long without a break in

poorly designed chairs car seats. Sedentary life and overeating together promote obesity. And obesity also increases the chances of back pain by overloading the spine. Apart from sedentary life, a major component of the modern lifestyle is mental stress. Stress has also been found related to back pain. Smoking, another lifestyle factor too increases the risk for back pain by reducing blood flow to the back.

Neck pain is similar to low back pain in many ways. It is associated with sedentary work and poor posture. Keeping the neck bent forwards while working with books and doing paper work, or while working on a computer sitting on a poorly designed seat is inviting neck pain. Further mental stress also leads to the spasm of the neck and shoulder muscles. Age related degenerative changes in the neck vertebra (cervical spine) may be accelerated by these lifestyle factors, as in case of the lower back (lumbar spine). The principles of treatment, thus, in both cases (back and neck) pain should be similar.

LIGAMENTS

Injury to the ligaments is, sometimes, the root cause of back pain. Ligaments are band – like structures of high tensile strength fixed to bones. They restrict the movement of the joint to safe limits. However, ligaments are stretchable to up to a point, and thus permit the necessary movement. The stretch ability of ligaments can be maintained and improved upon by regular stretching exercises and medicinal treatment.

NECK PAIN

Neck pain is similar to low back in many ways. It is associated with sedentary work and poor posture. Keeping the neck bent forwards while working with books and doing paper work, or while working on a computer sitting in a poorly designed seat, cause neck pain. Also, in most cases, mental stress leads to the spasm of the neck and shoulder muscles. Age-related degenerative changes in the neck vertebrae (cervical spine) may be accelerated

by these lifestyle factors as in case of lower back (lumbar spine). These degenerative changes might lead to pressure on nerves issuing from the cervical spine, thereby, leading to pain in the shoulder, near the shoulder blade or in the arms. In some cases, there might be a tingling sensation or weakness in the arms.

Back and neck pain may be acute or chronic. An attack of acute back pain may be triggered by several factors such as-

1). A major accident in which muscles or ligaments may get overstretched, or vertebrae may fracture, or an in vertebral disc might herniated.

2). A minor accident, like bending down to pick up a pen, or to walk to some person aggravate some silent damage or muscle weakness already present.

3). Some hidden spasm of muscles / or the blood vessels supplying them which may be precipitated by mental tension, exposure to cold etc. the mechanism is similar to that which triggers a heart attack.

Back or neck pain might become chronic if:-

1). An acute attack is treated with too long a bed rest or the excessive use of a lumber support (belt) because both these can weaken the muscles.

2). An acute attack is treated with inadequate or in inappropriate exercises.

3). The acute attack is due to an injury to a ligament. Ligaments heal poorly, and once injured remain prone to repeated injury.

JUSTIFICATION

When you are relaxed you can cope better with almost any task. That is what Ashwagandha herbal remedies do they take away the tiredness, they ease the tensions and allow you to feel energetic and able to perform. Energy is of vast importance in our body. In its absence body's efficiency to do work lowers, fatigue and other nutritional deficiencies occur. The laboratory studies at the Memorial Sloan-Kettering Cancer Centre (MSKCC) indicate that Ashwagandha

possesses anti-inflammatory, anti tumor and anti –arthritic qualities that may prevent cartilage damage in osteoarthritis, Thus it helps in maintaining body weight by providing energy, increasing red blood cells levels, enhancing immune system and increasing white blood cells which are all risk factors in underweight. Consumption of Ashwagandha, also showed, relief of symptoms like loss of appetite and general debility.

To accomplish the objectives purposive random sampling was done. So samples were taken from Ghaziabad city in which questionnaire, specific information about musculoskeletal pain, & post evaluation were used to assess the effect. Questionnaire cum interview method was used for collecting the data.

After collecting all the information, the Ashwagandha supplement was given to the respondents of experimental group. Each respondent was taken 1tsp of Ashwagandha with milk daily for 60 days.

The finding of the study can be summarized as follows:

In this study total 50 respondents were taken. The selected respondents were between 25-45 years of age.

- The study found the prevalence of musculoskeletal pain is 80% in women.
- The survey found that 42.5% of the respondents having pain belonged to 25-30 yrs of age.
- The survey reveals that in sensory evaluation code II (lassie with 2 gm) scored highest in sensory evaluation thus product was used for the supplementation.
- The results show that 62.5% of the respondents living in nuclear family were suffering from pain because ladies of nuclear family were under pressure due to work load of family, children's and responsibility of home and work.
- The study reveals that 62.5% non-working respondents were and they are suffering

from pain because they didn't take care of themselves.

- The results concluded that 32.5% of the respondents were post graduate , they were educated but still they suffering from pain due to careless attitude, loaded time, work pressure.
- The results show that 37.5% of the respondents were feeling decrease energy & weakness because they were suffering from pain.
- The results show that 20 % of the respondents were feeling neck pain and 17.5% of the respondent suffering from back pain.
- The results show that 87.5% of the respondent were taking medical treatment among them 45% were taking herbal, 25% were taking homeopathic and 12.5% were taking allopathic.
- The results show that 72.5% of the respondents were vegetarian and they are suffering from pain.
- The results show that 62.5% were consume milk once in a week, suffering from pain where as 7.5% were consume daily so that's reason of less pain.
- The results show that 50% respondent were consume fast & inconvenience food they were suffering from pain.
- The results show that 75% of respondents were intake of tea & coffee was very high they were suffering from pain due to high intake of tea, coffee there is some compounds which inhibits nutrient absorption.
- The results show that 62.5% of respondents were using painkiller because they were having pain also were not aware about the harmful effects of painkillers.
- The results shows that 70% of respondents were not exercise regularly, suffering from pain. And thus sufferer from pain of the sedentary lifestyle.

- The results show that 70% of respondents were not doing any type of exercise like yoga, walking, cycling etc, and suffering from pain. It is the main factor for pain.
- The results show that 55% of respondents were not using any type of precautions during pain.
- The results show that 42.5% of respondents using other type of measures to relief in pain like- gel, belt etc.
- The results show that 87.5% of respondents were not having knowledge of good & bad posture.
- 15 subjects were given supplementation out of them 6.6% found improvement in decrease energy & weakness, where as 26 % found improvement in back pain and 33% found improvement in neck pain and 6.6% decrease in sadness & depression, and 6.6% found improvement in tired and fatigue.
- Taking into consideration the total results, it can be said that the new product may be useful in cases of suffering back and neck pain etc.

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