



TREATMENT OF ANKYLOSING SPONDYLITIS BASED ON ALLOPATHIC AND AYURVEDIC SYSTEM OF MEDICINE

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ABSTRACT

Ankylosing spondylitis previously known as Bechterew's disease and Marie-Strümpell disease. It is a chronic inflammatory disease of the axial skeleton with variable involvement of peripheral joints and nonarticular structures. AS is a form of spondyloarthritis, a chronic, inflammatory arthritis where immune mechanisms are thought to play a key role. It mainly affects joints in the spine and the sacroiliac joint in the pelvis and can cause eventual fusion of the spine. The treatment of ankylosing spondylitis typically involves the use of medications to reduce inflammation, suppress immunity to stop progression of the disease, physical therapy, and exercise. Medications decrease inflammation in the spine and other joints. Physical therapy and exercise help to improve posture, spine mobility, and lung capacity. Ayurveda offers excellent therapies for treating Ankylosing spondylitis. The treatment comprises of a series of purification procedures for Detoxification through world renowned Ayurveda Panchakarma therapies along with the administration of researched medicines internally. In these articles treatment strategies for western system of medicine and Indian system of medicine was explained in detail. The main mechanisms involved in treating the conditions such as fever, back pain, swelling at various joints, stiffness in neck and back bone was explained. Different medicines used for the treatment of symptoms and their mechanism of action was explained properly. Strict diet restrictions along with life style modification are essential parts of the therapy. Following the diet as advised not only helps in recovering fast but also in preventing further worsening of the condition. The importance of diet in treating the condition was also explained.

Keywords: Ankylosis spondylitis, HLA B-27, Ama vata, Panchakarma.

INTRODUCTION

Autoimmune diseases occur when the body's tissues are attacked by their own immune system. The immune system contains a complex organization of cells and antibodies designed normally to attack antigens such as infections. Patients with autoimmune diseases have antibodies in their blood that target their own body tissues that lead to inflammation. Among different autoimmune disorders Ankylosing Spondylitis and rheumatoid arthritis are considered to be highly prevalent in the world. Ankylosing spondylitis is a form of chronic inflammation of the spine and the sacroiliac joints. Chronic inflammation in these areas causes pain and stiffness in and around the spine. Over time, chronic inflammation of the spine can lead to a complete fusion of the vertebrae, a process referred to as ankylosis. Ankylosis leads to loss of mobility of the spine. Ankylosing spondylitis is two to three times more common in men than in women. The most common age of onset of symptoms is in the second and third decades of life. It affects all age groups, including children. When it affects children, it is referred to as juvenile ankylosing spondylitis. Ankylosing spondylitis is believed to be genetically inherited and a majority (nearly 90%) of people with ankylosing spondylitis is born with a gene known as the HLA-B27 gene. Recently two more genes have been identified that are associated with ankylosing spondylitis. These genes are called ARTS1 and IL23R. These genes seem to play a role in influencing immune function. Initial inflammation may be because of activation of immune system towards a bacterial infection. Chronic tissue inflammation resulting from the continuous activation of the body's own immune system in the absence of active infection is the hallmark of an inflammatory autoimmune disease[1,2].

Etiology and Pathophysiology[3]

The tendency to develop ankylosing spondylitis is believed to be genetically inherited, and a majority (nearly 90%) of people with ankylosing spondylitis is born with a gene known as the HLA-B27 gene. Blood tests have been developed to detect the HLA-B27 gene marker and helped in understanding relationship between HLA-B27 and ankylosing spondylitis[1,2]. The HLA-B27 gene appears only to increase the tendency of developing ankylosing spondylitis, while some additional factor(s), perhaps environmental, are necessary for the disease to appear or become expressed. For example, while 7% of the United States population has the HLA-B27 gene, only 1% of the population

actually has the disease ankylosing spondylitis. In northern Scandinavia (Lapland), 1.8% of the population has ankylosing spondylitis while 24% of the general population has the HLA-B27 gene. Even among HLA-B27-positive individuals, the risk of developing ankylosing spondylitis appears to be further related to heredity. In HLA-B27-positive individuals who have relatives with the disease, the risk of developing ankylosing spondylitis is 12%. Recently, two more genes have been identified that are associated with ankylosing spondylitis[9]. These genes are called ARTS1 and IL23R. These genes seem to play a role in influencing immune function. It is anticipated that by understanding the effects of each of these known genes researchers will make significant progress in discovering a cure for ankylosing spondylitis[7]. Men prone to this disease more than women [4].

Diagnosis

Ankylosis spondylitis can be diagnosed by Physical examination, X-Ray and blood tests. Physical symptoms include pain, stiffness, decreased range of motion of spine indicates inflammatory back bone. Early symptoms include stiffness, pain in low back. Years can pass before the diagnosis of ankylosing spondylitis is even considered. Further diagnosis can be done by X-ray examination. X-ray examination shows squaring of vertebra and fusion of vertebra. The presence of genetic marker HLA B-27 is identified by blood test. Erythrocyte sedimentation rate is a non specific marker for inflammation throughout the body. Flexibility of neck and back will be decreased [5, 6].

Treatment for ankylosing spondylitis [7]

The treatment of ankylosing spondylitis typically involves the use of medications to reduce inflammation, suppress immunity to stop progression of the disease, physical therapy, and exercise. Medications decrease inflammation in the spine and other joints and organs. Physical therapy and exercise help to improve posture, spine mobility, and lung capacity.

Anti-inflammatory agents

Aspirin and other nonsteroidal anti-inflammatory drugs (NSAIDs) are commonly used to decrease pain and stiffness of the spine and other joints. Commonly used NSAIDs include indomethacin (Indocin), tolmetin (Tolectin), sulindac (Clinoril), naproxen (Naprosyn), and diclofenac (Voltaren). Their common side effects include stomach upset, nausea, abdominal pain, diarrhea, and

even bleeding ulcers. These medicines are frequently taken with food in order to minimize side effects [8].

Disease modifying agents

In some people with ankylosing spondylitis, inflammation of joints such as the hips, knees, or ankles becomes the major problem. Inflammation in these joints may not respond to NSAIDs alone. For these individuals, the addition of medications that suppress the body's immune system is considered. These medications, such as sulfasalazine (Azulfidine), may bring about long-term reduction of inflammation. An alternative to sulfasalazine that is somewhat more effective is methotrexate (Rheumatrex, Trexall), which can be administered orally or by injection. Frequent blood tests are performed during methotrexate treatment because of its potential for toxicity to the liver, which can even lead to cirrhosis, and toxicity to bone marrow, which can lead to severe anemia [4].

TNF-Blocking agents

If nonsteroidal anti-inflammatory drugs (NSAIDs) are not effective in a patient whose condition is dominated by spinal inflammation (and 50% do respond), then biologic medications that inhibit tumor necrosis factor (TNF inhibitors) are indicated. These TNF-blocking medications have been shown to be extremely effective for treating ankylosing spondylitis by stopping disease activity, decreasing inflammation, and improving spinal mobility. Examples of these TNF-blockers include etanercept (Enbrel), infliximab (Remicade), adalimumab (Humira), and golimumab (Simponi). All TNF inhibitors, including Remicade, Enbrel, Humira, and Simponi can be effective in treating ankylosing spondylitis. The improvement that results for TNF inhibition is sustained during years of treatment. If the TNF inhibitors are discontinued relapse of disease occurs in virtually all patients within a year. If TNF inhibitor is then resumed, it is typically effective [9].

Corticosteroids

Oral or injectable corticosteroids (cortisone) are potent anti-inflammatory agents and can effectively control spondylitis and other inflammations in the body. Unfortunately, corticosteroids can have serious side effects when used on a long-term basis. These side effects include cataracts, thinning of the skin and bones (osteoporosis), easy bruising, infections, diabetes, and destruction of large joints, such as the hips.

Physical Therapy

Physical therapy for ankylosing spondylitis includes instructions and exercises to maintain proper posture. This includes deep breathing for lung expansion and stretching exercises to improve spine and joint mobility. Since ankylosis of the spine tends to cause forward curvature, patients are instructed to maintain erect posture as much as possible and to perform back-extension exercises. Patients are also advised to sleep on a firm mattress and avoid the use of a pillow in order to prevent spine curvature. Ankylosing spondylitis can involve the areas where the ribs attach to the upper spine as well as the vertebral joints, thus limiting breathing capacity. Patients are instructed to maximally expand their chest frequently throughout each day to minimize this limitation.

Exercise programs are customized for each individual. Swimming often is a preferred form of exercise, as it avoids jarring impact of the spine. Ankylosing spondylitis need not limit an individual's involvement in athletics. People can participate in carefully chosen aerobic sports when their disease is inactive. Aerobic exercise is generally encouraged as it promotes full expansion of the breathing muscles and opens the airways of the lungs [10].

Inflammation and diseases in other organs are treated separately. For example, inflammation of the iris of the eyes (iritis or uveitis) may require cortisone eyedrops (Pred Forte) and high doses of cortisone by mouth. Additionally, atropine eye drops are often given to relax the muscles of the iris. Sometimes injections of cortisone into the affected eye are necessary when the inflammation is severe. Heart disease in patients with ankylosing spondylitis, such as heart block, may require a pacemaker placement or medications for congestive heart failure [11].

Cigarette smoking is strongly discouraged in people with ankylosing spondylitis, as it can accelerate lung scarring and seriously aggravate breathing difficulties. Occasionally, those with severe lung disease related to ankylosing spondylitis may require oxygen supplementation and medications to improve breathing[10]

Treatment based on Ayurvedic system of medicine

Ayurveda offers excellent therapies for treating Ankylosing spondylitis. The strength of Ayurveda in the area of spine and joint treatments is globally appreciated as it works on the root cause of an issue. Treatment is usually aggressive, long-term and requires regular and careful follow-ups. The treatment comprises of a series of purification procedures for Detoxification through world renowned Ayurveda Panchakarma therapies along with the administration of researched medicines internally. Panchakarma procedures requires around 60 - 90 days based on the severity & chronicity of the disease. Strict diet restrictions along with life style modification are essential parts of the therapy. Following the diet as advised not only helps in recovering fast but also in prevents further worsening of the condition[11].

Initially the patient is treated for the fever (Jwara chikitsa), as fever is one of the main presentations[12]. For treating the fever Amrithothara kwatha 60ml thrice daily, Amavathari ras tablet 250 mg thrice daily, and Amrutharishta 30ml twice daily will be advised. Even after 2 weeks of the above medications, if the fever did not subside, if the person continued to have high temperatures particularly at night then Amrutharishta will be replaced by Chitrakasava, and Amavathari ras by Vettumaran gulika. Then the fever will be subsiding. When the fever subsides completely Lepa (external application of medicated paste) will be applied to the sacroiliac and other painful joints together with a heated mixture of kottamchukkadi choorna and dhanyamla. It will reduce the swelling in knee joints. If the patient suffers from skin rashes Grihadhoomadi lepa will be suggested. After the fever had subsided, internal medication will be changed to Indukantham kwatha 15ml thrice daily, Marma gulika 1 twice daily, Shaddharana choorna 5g twice daily. While externally, Rooksha Pinda Sweda (sudation with medicated bolus) with Kolakulathadi choorna will be suggested for seven days. Since the sweda only brought the patient slight relief, treatment will be continued upto 10 days. Later he will be given purgation (Virechana) with gandharva eranda (Roots of Ricinus communis processed in castor oil.) on alternate days for one week to improve the appetite. During this whole time period, the patient's diet will be restricted to rice gruel, yavagu, processed with panchakola churna, with cooked green leafy vegetables with minimal salt and oil. Mudga yusha (green gram soup) was allowed once amavathari rasa was stopped. If the appetite improves then the patient will be allowed to take easily digestible steamed food items. After the Swedana (sudation), the patient felt good relief from the low back pain and morning stiffness will be only upto half an hour. To treat morning stiffness Niruha Basthi (medicated enema) will be planned with modified Balaguduchyadi yoga mentioned for vata vikara (treatment of vata). Basti (enema) will be administered according to kala basti format during which six niruhas (decoctions) and nine anuvasanas (oil) will be administered. The medicine for niruha basti (decoction enema) is prepared by mixing the drugs in a mortar with pestle, adding component medicines in the following order: makshika (honey), lavana (salt), sneha (oil), kalka (paste), and kwatha (decoction). It is administered on an empty stomach, using a conventional basti netra (syringe) and rexine encase as basti putaka (bag). Sahacharadi taila is used for anuvasana basti (oil enema), the dose being 60ml, administered on alternate days after food. Following the course of basti (enema therapy), the patient experiences significant improvement in the pain and stiffness in his low back and other joints. Subsequently, the following shamana (pacifying) medicines will be given for a period of 2 months - Rasnerandadi kwatha 15ml twice daily, Simhanada guggulu one tablet thrice daily, and Gandharva eranda 15ml at 6 am (empty stomach) once a week. To improve the haemoglobine Ayaskriti 30ml twice daily is administered for a period of 1 month, Mild spinal exercises were also advised to prevent occurrence of stiffness in due course of time [13].

Conclusions

As there is no permanent treatment for ankylosing spondylitis life style modifications and dietary modifications should be given proper importance to improve the quality of life. Research should be continued to prevent the occurrence, to control the progression of disease and to treat acute condition of Ankylosing spondylitis. Scientists should concentrate on the alternative systems of medicines such as Naturopathy and ayurvedam to improve the condition. Both allopathic and ayurvedic treatments should be considered together for better control of the disease.

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