

Introduction to juvenile rheumatoid arthritis nursing essay



**ASSIGN
BUSTER**

In order to fully understand and grasp the meaning of the term juvenile rheumatoid arthritis (JRA), one needs to look into its componential words and see what each of them mean. The term juvenile refers to the state of being young, childish or infantile. Rheumatism describes any painful condition related to the motor system of the body. This pertains to joints, muscles, soft and connecting tissues. As discussed to this point, the prefix rheuma- originates from a Greek word "rheuma"[1] which pertains to the flowing of a river or stream. Arthritis on the other hand is a term concerned just with joint disorders. The term again originates from the Greeks. "Arthro-" means joint and "-itis" means inflammation. A joint is where bones meet such as the shoulder joint, knee joint, hip joint and the small joints in the hands and feet. Joining the terms to fully comprehend the phrase juvenile rheumatoid arthritis, one can conclude that it is a joint disorder found in youth. Indeed, arthritis is not a disorder exclusive to the elderly population.

Introduction to Juvenile Rheumatoid Arthritis

Children at the age of sixteen and below who experience joint disorders fall in the category of juvenile rheumatoid arthritis. Children can complain about aches in their joints which can be caused by multiple reasons. However, if the pain persists for six weeks[2] or more or there is swelling on or around the joints, the child might be suffering from JRA. Arthritis is a chronic condition and lasts a long time. It causes inflammation of one or more joints, sometimes retarding bone development and growth. Important questions that arise from the discussion so far are: 1) Why categorize juvenile arthritis as a disease separate from that experienced by the adults?, and 2) Why can the two not be considered the same and treated as such when it is joint

<https://assignbuster.com/introduction-to-juvenile-rheumatoid-arthritis-nursing-essay/>

disorder that is the core problem? To answer these questions, some major differences between adult and juvenile rheumatoid arthritis are provided as follows:[3]

Quick Facts and Statistics

The majority of the patients suffering from JRA outgrow the disease, a finding that is very rare in the adult forms of arthritis. Rheumatoid arthritis in adults is a single disease with different manifestations, while JRA has distinct subtypes and is much rarer than arthritis in adults. JRA patients, more often than not, have negative rheumatoid factor (RF) in blood while seventy to eighty percent of the adults with rheumatoid arthritis have positive rheumatoid factor in circulation. JRA interferes with proper growth of the bones while that is not the case in adult in whom bones have already fully grown and developed. Due to these and other age-related factors, juvenile arthritis is termed a separate disease and dealt with accordingly. There are three major subtypes of JRA which can be determined by following the pattern of the disease in its first six months, considering how many joints are involved and whether certain types of antibodies are present in the blood. These include the following.[4]

Oligoarticular JRA In this kind of JRA, only a few joints are affected. It usually affects large joints such as knee, shoulder and elbow. Oligo means “ short” or “ few”. When only one joint is affected, it is called monoarticular arthritis. This type is not very severe.

Polyarticular JRA This form of JRA affects five or more joints, usually in hands and feet. A typical symptom is the swelling of fingers and toes. This type of <https://assignbuster.com/introduction-to-juvenile-rheumatoid-arthritis-nursing-essay/>

JRA is often symmetrical, which means that if one joint is affected on one side of the body, the same joint is affected on the other side as well.

Systemic JRA This type of JRA causes swelling, pain and limited motion in one or more joints. It also causes inflammation of internal organs such as the heart, spleen or liver. Typically, it causes fever and a pink rash. Fever comes at the same time every day. It is sometimes referred to as the Still's disease.

The oligoarticular and polyarticular types of JRA are found to be more common among girls than among boys. However, systemic JRA equally affects girls and boys. Approximately fifty percent of the children suffering from JRA have the oligoarticular type, thirty percent have polyarticular type, and twenty percent suffer from the systemic type. Some important statistics, (from the same source) about the prevalence of JRA are listed below. These statistics give an insight about the magnitude of the problem and the number of people suffering from it.[5]

One out of every 1000 children is affected by JRA worldwide.

Young girls are more susceptible to the disease than boys are.

The disease is more common among Caucasians than any other race.

It is one of the most common childhood diseases found in the U. S.

Approximately 294, 000 children are affected by JRA in the U. S.

Ambulatory care visits for JRA and other pediatric arthritis conditions are on average 827, 000 annually.

A new term for JRA has recently gained popularity—juvenile idiopathic arthritis (JIA). Idiopathic is a medical adjective which means when something happens spontaneously or without known cause. Since there are not many known causes of juvenile arthritis, thus the term JIA came into existence. Research suggests that JIA patients have a condition called autoimmune process.

[6]This is when the immune system of the body becomes overly active and inappropriately starts attacking joint tissues as if they were harmful foreign bodies. Autoimmune processes are speculated to be triggered by a variety of reasons. On the top of the list are certain bacteria and viruses. Against popular belief, there is scarce evidence of children with food and other allergies developing arthritis. However, some research suggests genetic roots of the disease. If one family member has been diagnosed with an autoimmune disease, it is very much likely that others, especially siblings, may have it too. Diagnosing JIA is not an easy task. Most doctors use a combination of blood tests, X-rays (to rule out fractures or cancer) and physical examination. Physical examination of the child is considered to be the most important of the three. This will be discussed in detail later on in the chapter.

Distinction

Since there are more than a hundred different forms of arthritis known and treated, it is important to know what major factors distinguish one form from the other and how they affect the patient so that the problem is diagnosed properly and taken care of accordingly. Symptoms and features[7]typically related to JRA are as follows.

Persistent joint pain, inflammation and swelling can occur. Joint inflammation over a long period of time can cause permanent and irreversible damages to cartilage and bone. Morning stiffness of joints or stiffness after a nap has been observed, but the morning stiffness gradually improves after the patient awakens. A child with JRA might exhibit irritability and refusal to walk or even use a specific joint. The patient might also suffer from recurrent fever with temperatures exceeding a hundred degrees. Fever usually occurs at the same time daily. Pale red or pink rash in the form of spots are typical in systemic JRA and usually appear on the chest and thighs and sometimes on other parts of the body. The rash usually accompanies fever spikes.

Bone Characteristics

Joints affected by JRA are mostly the knee and the joints in the hands and feet. Anemia, a lack of enough red blood cells is a common feature of polyarticular JRA. Remissions and flare ups are a common feature of standard JRA. There may be periods when no symptoms appear (remissions) and then there are periods when the severity of the symptoms reaches its peak (flare ups). Bone growth can be adversely affected. Growth can either become too fast or too slow causing one limb to become longer than the other, joints may grow unevenly, budding out to a single side. Overall bone development and growth might be slowed down to a considerable extent.

Soft Tissues

Muscles and other soft tissues around the affected joints may weaken.

Weight loss and loss of appetite in children that suffer from JRA is very

common. Irritation and disease of the eye, which is composed of soft tissue, <https://assignbuster.com/introduction-to-juvenile-rheumatoid-arthritis-nursing-essay/>

is a typical feature of JRA. Symptoms include blurred vision or even complete loss of vision in extreme cases, excessive tearing, sensitivity to light, and redness in the eyes. Uveitis is the term for eye inflammation which affects the uvea of the eye. Another serious form of eye inflammation caused by JRA is iridocyclitis, a form of anterior uveitis. This is a serious problem and can lead to scarring of the eye and vision loss. Initially, there may be no visible symptoms of an eye problem. Resultant sleep disturbances are frequent among JRA patients. Children often face difficulty falling asleep and awaken several times during the night. Daytime sleepiness, mood swings and fatigue is also common.

A child suffering from JRA should have regular eye checkups to detect any early changes in the eye in order to stop possible serious damage.

Solid Outgrowths

In some subtypes of JRA nodules develop on some parts of the body such as elbows. Nodules are small bumps which receive a lot of pressure and become extremely uncomfortable or painful for the patient. Swollen lymph nodes are also an outcome of JRA especially in the neck, under the jaw or on the groin. Patients may feel heat or a burning sensation in the joints as a result.

Significance of Knowing the Distinguishing Features

Symptomology

The characteristic symptoms and features explained above are only possible outcomes of JRA and stand for a major part of why it is important to know the <https://assignbuster.com/introduction-to-juvenile-rheumatoid-arthritis-nursing-essay/>

distinguishing features of JRA. Not all patients of this disease experience all the symptoms, and not all face the same intensity. Symptoms differ from child to child, and from subtype to subtype. Some patients may have longer remissions and fewer and shorter flare ups while others may have the opposite. Patients and caregivers must also realize that persistent joint inflammation, pain, and stiffness are common to all types of JRA and are mostly present in all patients and are typical signs of arthritis among children below the age of sixteen. Sensitivity to any changes that may occur in the child's gait, mood, sleeping habits can be very beneficial in a timely diagnosis and treatment of the disease. Children may not complain about the pain as one would have thought; they may learn rapidly to live with the pain.

The Overlooked Burden

JRA may affect the physical presentation of the young patient and can impact his or his emotional and social projection. This is another reason why it important to understand the distinguishing features of a JRA victim. Slower or faster bone growth can cause a limp or cause one arm or leg to be longer than the other and uneven joint growth provides for a different shape of the joints, especially elbows and knees. If joints of the hands and feet are affected, fingers and toes can become malformed and hands and feet can swell. Some medicines used in the treatment of JRA can cause weight gain due to water retention and make the face rounder. These changes in the physical appearance and the inability of the child to participate in some physical activities can create an emotional burden for him or her and cause extreme depression and stress. Others find it hard to accept the patients'

different physical appearances and more often than not are found to stare at <https://assignbuster.com/introduction-to-juvenile-rheumatoid-arthritis-nursing-essay/>

the patients, thus making them feel uncomfortable. Children with JRA feel left out and alienated. This stress is thought to further increase inflammation and joint pain. That is why proper emotional support from family as well as from school and an understanding of the child's feelings and limitations can help the JRA patient cope better with the disease.

It has been observed that children at a very young age with rheumatoid arthritis find it relatively easier to adjust than those in their teens. Growing up during the teens can be a challenging experience in itself without having to cope with a chronic, crippling and a life-altered disease. School life is affected as does the social environment. JRA can leave children as loners with not many friends around just as adults with arthritis suffer from depression and insomnia. Adults are however better able to express and share their feelings with their doctor. Children tend to internalize their feeling of despair, which makes the situation worse. Teenagers are known to be worse at handling their emotions as they are frequently depressed and disturbed. Parents must make sure that they join a local support group, have understanding teachers in school and can continue some form of physical activity during remissions. Different studies suggest that authoritative parents of teenage juvenile arthritis patients can worsen the situation. Giving enough autonomy in tasks such as socializing and physical activity can improve quality of life for these children, and hence provides another reason why knowing the distinguishing features of JRA is important.

Techniques

Initial Approaches

<https://assignbuster.com/introduction-to-juvenile-rheumatoid-arthritis-nursing-essay/>

There is no single test which can declare a child as having or not having juvenile rheumatoid arthritis. The first and the foremost factor that the doctor would consider is the length of time that the symptoms including joint pain, stiffness and/or inflammation have lasted. If the symptoms have lasted for more than six weeks, only then a doctor can consider further investigating for JRA. This is because these symptoms can arise from a variety of reasons such as injury and fractures. To rule out other causes of joint pain or inflammation, certain laboratory tests are run. X-rays are done to check for fractures or tumors that may be causing the inflammation. Imaging exam is also done to exclude diseases such as viral infections, bacterial infections, inflammatory bowel diseases and some forms of cancer that produce symptoms similar to that of JRA. A complete blood count (CBC) test is also done to rule out disorders such as leukemia and malaria.

Medical History

A detailed medical history and physical examination[8] can help in the detection of JRA immensely. A doctor can ask several questions to the child or to the parents that will help diagnose the problem. These questions may include the following:

When exactly did the symptoms first begin to appear?

Which joints are affected?

Do the joints feel stiffer in the morning?

Is the child limping?

Has there been weight loss?

Has there been a loss of appetite?

Can the child bear weight on the affected joints?

Is there a family history of arthritis?

The above inquiries provide very useful revelations for the doctor and will make diagnosis of juvenile rheumatoid arthritis much easier.

Physical Examination

The components of the physical examination of JRA are listed below.

Careful inspection of the affected joints

Evaluation of body temperature to record fever

Examination of the skin to look for rashes

Observation of the lymph nodes to look for any swellings

During such an examination the doctor takes notes of the kind of joint inflammation, other symptoms like fever or rash and the number and location of affected joints. This information is deterministic in the diagnosis of JRA.

At the Lab

Some laboratory screening tests[9]for JRA are listed below.

The Antinuclear Antibody Test This test is used for seeking certain antibodies present in the child suspected of having JRA. The presence of such antibodies increases the likelihood of the young patient to develop iritis, an eye inflammation thought to cause permanent damage to the eye. Some children with JRA have an increased risk of developing iritis. By helping to determine the likelihood of iritis, this test allows the doctor to regularly check the eyes of JRA victims who are more susceptible to develop iritis and prevent permanent damage.

Rheumatoid Factor Another blood test is done to see if rheumatoid factor is present in the blood of the child. The rheumatoid factor is an antibody that determines whether the child is likely to carry the disease into the adulthood or not. This antibody attacks healthy body tissues and causes damage.

Presence of RF in blood in a child is a surefire indication of JRA.

Other Tests Known as ESR or SED, the erythrocyte sedimentation rate test is used to determine the degree of inflammation and assists in figuring out the subtype of JRA present. Complement is a term that scientifically refers to a group of proteins in the blood. A complement test is simply done to measure the level of complement in blood. Low levels of complement are associated with immune system disorders such as JRA. Sometimes, urine analysis of the child can indicate kidney disorders that are again associated with immune system issues. White blood cell count in the blood is another screening technique for JRA. Increased number of these specialized cells indicates possible infections while a decreased amount suggests possible rheumatoid disease in the child. Arthrocentesis is a process whereby fluid is extracted from around the affected joint with the help of a syringe and then analyzed

<https://assignbuster.com/introduction-to-juvenile-rheumatoid-arthritis-nursing-essay/>

for diagnosis. Hematocrit is a test to measure the level of red blood cells in the blood. Decreased levels of red blood cells, also known as anemia, are associated with rheumatoid diseases in children.

Treatment as a Technique

Once JRA has been detected, treatment is immediately started. The treatment approach is twofold: 1) to reduce the child's pain and enable him or her to lead a life as normal as possible and; 2) secondly, to prevent any permanent and irreversible damage. Treatment for JRA includes physical therapy as well as medicine. Physical therapy is used to keep the joints flexible, which makes them less stiff and painful. Swimming, certain form of aerobics, stretching exercises and other physical activities that a therapist suggests can be a major help in the fight against JRA. Doctors and therapists may also suggest splints and other devices to ensure proper bone growth, a major concern in juvenile rheumatoid arthritis. Shoe lifts or inserts may be advised for children with unequal legs. Increased intake of vitamin D and calcium is also advised to the patients. Massages, hot bathes and acupuncture are thought to temporarily relieve the pain and provide some comfort to the youngsters. Medication is prescribed according to the intensity of the disease and the sub type.

Research

JRA research is being focused on the causes, prevention and treatment of the disease. While research so far has not been able to specify any particular causes of JRA, new advances in research show both genetic and

environmental factors such as viruses and bacteria are responsible for
<https://assignbuster.com/introduction-to-juvenile-rheumatoid-arthritis-nursing-essay/>

causing the disease. Recent research suggests that JRA is associated with a virus called human intracisternal A-type particle, or HIAP.[10]Antibodies against this virus have been found in a high percentage among patients of JRA. HIAP technology is now being used to develop diagnostic tests and treatment for the disease. For the genetic part of the possible causes, the human leukocyte antigen (HLA) haplotype gene is thought to determine the sub type of JRA in the patient. The National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) has set up a research registry for families with two or more siblings with JRA.[11]The purpose of this registry is to study sibling pairs and focus on the genes that seem susceptible to the disease. The aim is to eventually use gene therapy and other gene treatment to treat such disorders.

The Current Situation

For quite some time now JRA has been considered to be an autoimmune disease which means that the body's immune system starts producing such antibodies which attack healthy tissues of the body resulting in inflammation and tissue damage. Recent research has now shown that not all cases of JRA are autoimmune, some are caused by auto-inflammatory disorders. In such a disorder antibodies are not involved, rather white blood cells, that attack harmful substances in the body malfunction and cause inflammation for unknown reasons. Auto-inflammatory disorders cause fever and rash. There are still no known ways of preventing JRA. Scientists and doctors are always searching for new and better treatments for JRA-affected children which are more effective and have fewer side effects. In addition to research, clinical trials and controlled environment case studies can help understand many <https://assignbuster.com/introduction-to-juvenile-rheumatoid-arthritis-nursing-essay/>

new aspects of the disease and the treatment. Anyone suffering from JRA can voluntarily become a part of such clinical trials and case studies. Areas of current research for JRA include the following:[12]

Long-term effects of the use of the drugs methotrexate and corticosteroid.

Causes of sleep problems among the children suffering from JRA.

Causes and treatment of potential anemia in the patients.

Effectiveness of calcium supplementation in increasing bone density of the patients.

Long-term impacts of the recurrent pain in children.

How exactly interleukin, a chemical involved in inflammation, affects the growth of new blood vessels in the joint tissues and causes the said tissues to overgrow.

Comparison of: 1) the effects of intravenous methylprednisolone, a corticosteroid medicine and intravenous cyclophosphamide that suppresses the immune system, and 2) the effects of using intravenous methylprednisolone alone.

Analysis

This chapter covered the distinguishing characteristics, techniques in detection, and advances in research for JRA. It is important to know that joint pain and stiffness is evidently not just a problem characteristic of grandparents. Juvenile rheumatoid arthritis is a joint disorder that affects

<https://assignbuster.com/introduction-to-juvenile-rheumatoid-arthritis-nursing-essay/>

children below the age of sixteen. It is a chronic disease and lasts for a long period of time with remissions and flare ups. There are three major subtypes of JRA: 1) oligoarticular JRA, which involves only a few joints, 2) polyarticular JRA involving five or more joints, and 3) systemic JRA in addition to arthritis symptoms also typically causes a fever and a rash and in extreme cases affects internal organs like heart, lungs and kidneys. More young girls than boys are affected by the first two subtypes while boys and girls are equally likely to develop the third, the rarest kind. Polyarticular JRA is the most common subtype but also the least severe.

Clear-cut evidence on what exactly causes JRA is nonexistent. However, JRA is known to be an autoimmune disorder which means that the body's immune system starts attacking healthy body tissues of children. The disease is thought to have both genetic and environmental factors as the root causes. Symptoms differ from patient to patient and from subtype to subtype. For adults, rheumatoid arthritis is usually a lifetime disease, but more than half of the JRA affected children grow out of it. Presence of rheumatoid factor in the blood of the child determines the likelihood of the child to carry the disease into adulthood. JRA can affect the physical appearance of a child and the course of his or her daily life. This can lead to an emotional burden and stress which if not handled properly can further aggravate the problem.

Different screening techniques are used to diagnose the disease. First, the doctor notes the medical history from the patient and the parents. This is usually followed by a detailed physical examination of the child, which is considered a very crucial step of the diagnosis process. Some laboratory

<https://assignbuster.com/introduction-to-juvenile-rheumatoid-arthritis-nursing-essay/>

tests are run to rule out other possible diseases with similar symptoms such as viral and bacterial infections, cancer, fractures and injuries. These tests include complete blood count, X-rays, imaging tests, and bone scans. Some laboratory tests done to determine the level of inflammation and the possible complications of the disease include the erythrocyte sedimentation rate test, the antinuclear antibody test, urine analysis, arthrocentesis, hematocrit and white blood cell count. After the disease has been diagnosed, the treatment begins. There is no permanent cure of the disease. The treatment focuses on controlling the symptoms and preventing permanent damage. Recent research is focusing on discovering the genes which seem to determine JRA or its sub types so that they can be used in gene therapy and treatment. Sibling-pairs are being studied to discover patterns.

Technology is being used to fight human intracisternal A-type particle HIAP, a virus antibodies against which have been found present in majority of the JRA patients under study. It has been found that many cases of JRA are not because of autoimmune disorders, but rather they are caused by auto-inflammatory disorders. This is when the white blood cells malfunction and cause inflammation. More recent research facets include the study of long-term effects of certain drugs on children, causes and treatments of sleep disorders and anemia and effectiveness of calcium supplementation on bone density. The aim of research and available treatments remain to make the quality of life of patients and caregivers better and to enable them to lead a life as normal as possible.