Meningoencephalitis

Business

Meningoencephalitis (meninges- membranes; enkephalos brain; and -itis inflammation) is the inflammation of the brain and meninges, whose etymology is variable. The most common are bacterial and viral infections.

Others causes can be by vaccines, tumors, infectious syndromes, intracranial cysts, insect bites, or simply being scratched by an animal. This medical condition has a wide range of signs and symptoms which can be confused with many other diseases. Symptoms may vary in each patient depending on the patient’s age and treatment condition. There’s no sex predominance, or socioeconomic status, but is more common in children and elderly. It is more common in children since their white blood cells don’t have enough experience to attack any bacteria or virus that comes in the body, and the immune system on the elderly isn’t as strong to fight every infectious disease. In the United States, is estimated that for every 100, 000 people, there’s 3 cases reported.

This is because in the U. S. there are many children daycares, and asylums, and the bacteria or virus can reproduce faster in closed places. Children get things that have been on the floor and usually put those in their mouth, and that may have bacteria, or they could also go to the restroom and not wash their hands after, they may touch their face or mouth, or other toys, spreading the bacteria. In asylums people can get sick, and since they are in a closed place the virus could spread easily.

The condition is more active during autumn and winter since there are more respiratory infections. Its beginning develops very fast, and its manifestations are less than 72 hours, rarely exceed a week. Some

symptoms that patients have within those 72 hours are; vomiting, fever, headache, neck pain, sleepiness, joint pain, and convulsions. After 3 days, there’s a higher possibility of death, or the symptoms are more severe. During the 72 hours the meninges and brain will start to swell. Process There’s many ways how a bacteria or virus can enter your body, for example when children get their vaccines are for their immune system stronger, so when they give you your shots, the white blood cells have to attack it, but if they don’t it could get through the blood brain barrier and damage the meninges and brain.

Another way is, if a mosquito bites you while urinating, and then you scratched yourself, there’s a chance that the urine may enter your body directly to the blood through the place that it bit you. But most of the time a virus or bacteria that is in the air could enter the body through the nasal cavity, to the lung and then is in your blood. When a virus or bacteria enter the body, the body temperature will change to try to kill it, that’s why patients get fevers. When the virus or bacteria gets in your blood, it starts invading the white blood cells. From there, it goes through the blood-brain barrier.

The blood-brain barrier (BBB) is a mechanism that creates a barrier between brain tissue and circulating blood to protect the central nervous system. After the virus passing the BBB, the low phagocytic activity allows the rapid multiplication. Then infection of leptomeninges, and cerebrospinal fluid spread. Leptomeninges is a term that refers to the pia mater and arachnoid mater, two of the membranes that surround the brain and spinal cord. The

cerebrospinal fluid (CSF) is a fluid that circulates through the central nervous system.

The cerebrospinal fluid is located between the brain and skull is like a cushion that provides immunological protection. Then a change and alteration in substances that exists in the areas of meningeal layers produce inflammatory substances and toxins. It causes a serious intracellular inflammation. The inflammation reaches to the cerebrospinal fluid and produces symptoms of meningeal irritation brain. Meningitis makes the cerebrospinal fluid be contaminated, and when it’s infected, most things that surround the CSF get swollen. It causes dropsy and increases intracranial pressure and decreases blood flow.

When the brain is being compressed it causes the vessels burst and dying neurons. The interaction of these events, serious and sustained results in neuronal injury and focal or diffuse brain injury irreversible. Cells of the nervous system, called nerve cells or neurons, are specialized to carry “ messages”. Neurons move around by electrical impulses, if the electrical impulses are too low or too high, that can be problem, causing seizures, or make someone epileptic. That can also make someone be a comma, or paralyzed. When the meninges get swollen, that makes the brain get compressed, and can suffer from hydrocephalus, which is a buildup of cerebrospinal fluid inside the skull, that leads to brain swelling.

The brain starts to be compresses and doesn’t really have any space to have even space for blood to flow normally, that causes parts of the brain and neurons to die. This can affect in many ways, depending in what specific

area has died. Types of Clinical Manifestation The first silent pattern develops progressively in one or more days, preceded by febrile illness, manifested by general malaise refusal to eat, lethargy. The second form is severe and sudden in a few hours for S. pneumoniae and H. influenzae.

Clinical Syndromes • Infectious: fever, anorexia, hyperthermia, and malaise. • Intracranial Hypertension: vomiting, cephalus, irritability, and alterations of consciousness. • Meningeal Irritation: stiff neck, signs of Kernig and Brudzinsky. • Neuronal Damage: alterations of consciousness, and seizures. Testing There are many tests that the doctors take, to verify what disease or medical condition it is, such as; spinal tap, blood count, blood chemistry, urinalysis, x-rays, x-ray computed tomography and magnetic resonance imaging.

The spinal tap is a test where they extract cerebrospinal fluid from the spinal cord. Blood count (CBC) is a common blood test that gives information about the three major types of cells. A urinalysis is a laboratory examination of a person’s urine. The urine’s chemical content, like sugar and protein, and the types and amounts of cells it contains. X-ray computed tomography, or computed tomography (CT) can be used for medical imaging created by a computed. It’s a three-dimensional image of the x-rays.

Magnetic resonance imaging (MRI) is a test that uses a magnetic field and radio waves, that produces images of body structures. Consequences Depending on what area on the brain that the virus or bacteria has affected, depends the consequences. It affects: learning, hearing alteration, loss of coordination, hyper behavior, stress, anxiety, visual problems, convulsions,

behavior problems, mental retardation, problem with muscle tone, and paresis. Preventions Vaccines are the only thing that could prevent from happening. This could make the white blood cells stronger.