

Diagnosis and Prevention of Brain Infections

Kommu Santhosh*

Department of Biotechnology, Kakatiya University, Warangal, Telangana, India

Neurological infections are a wide category that includes both intermittent and inherited diseases. They're marked by the gradual loss of neuronal structure and function, which is also linked to neuronal death. Neurological disorders are caused by a number of causes, including ageing, diet, environmental factors, and heredity, among others [1].

The two prevalent neurodegenerative disorders are Alzheimer's disease (AD) and Parkinson's disease (PD). Dementia affects an estimated 24 million individuals globally, with Alzheimer's disease accounting for 60% of these cases. Cerebral atrophy is a clinical characteristic of Alzheimer's disease, as is memory and learning disability. According to the Alzheimer's Organization, 13 percent of individual's aged 65 in developing countries have Alzheimer's disease. It is the fifth leading cause of death in this age group of patients. The cause of Alzheimer's disease is unclear, and the only medications available are symptomatic. The current therapies for cognitive dysfunction in Alzheimer's disease are focused on the elimination of neurotransmitters or enzymes. Acetylcholinesterase inhibitors, antioxidants, amyloid-targeted medications, and nerve growth factors are among those that offer symptomatic relief. None of the available drugs seem to be able to cure or delay the development of Alzheimer's diseases [2].

Parkinson's disease (PD) is a central nervous system disorder that causes difficulty moving the body. Tremor, rigidity, and bradykinesia are common symptoms, as are poor balance and trouble walking. After Alzheimer's disease, Parkinson's disease is the most prevalent neurodegenerative condition. It affects over 5 million people worldwide and over a million people in the United States. Progressive depletion of dopaminergic neurons leads to a substantial loss of dopaminergic levels, which is one of the signature characteristics of PD pathology. The neurotransmitter dopamine (DA) is responsible for transmitting the electrical signals needed for normal physical motion. Levodopa (a precursor to dopamine) and dopamine receptor antagonists are used to combat this deficit by restoring dopaminergic function. Dopamine agonists, such as levodopa, are currently used as first-line treatment for Parkinson's disease. If the condition progresses, patients become less receptive to levodopa and develop motor side effects. Constipation, urinary retention, glaucoma, and cognitive dysfunction are some of the side effects. To this day, Parkinson's disease is incurable. Patients will only get symptomatic relief from the latest pharmacological and nonpharmacological therapies. Available therapies tend to increase the patient's cognitive capability for as long as practicable, however they may not affect the neurodegenerative disorder's development. The development of nanotechnology can provide a way to address the disease's diagnostic and therapeutic challenges [3].

Ischemic stroke is a form of ischemic disease that presents as a sudden onset of a chronic neurologic deficit. It's a form of cerebrovascular disease in which the brain is depleted of oxygen, nutrients, and glucose due to blockages in the blood vessels that feed it. Unilateral paralysis or numbness of the hands, arms, or legs, aphasia, vision disability, dysarthria, depression, lack of balance and mobility, trouble walking, and, in rare circumstances, mortality are all symptoms that can occur from seconds to hours. Stroke is the fourth most common cause of death in the United States. It is the third leading

cause of death in developing countries and the world's second leading cause of death. Ischemic stroke accounts for 80–87 percent of all stroke events, with hemorrhagic stroke accounting for the majority [4].

The following is a list of various diseases.

- Dementia
- Neuroinfections
- Pain associated with neurological disorders
- Multiple sclerosis
- Epilepsy
- Headache disorders
- Neurological disorders associated with malnutrition
- Traumatic brain injuries

Present stroke treatments include radiation and chemotherapy, all of which have significant side effects. They are inconvenient and ineffective, and they destroy both healthy and diseased cells and tissues. Computed tomography and magnetic resonance imaging are the most widely used methods for diagnosing stroke. Because of the high cost, lack of availability and radiation contamination from these devices, their use is limited. For the prevention of ischemic stroke, acute therapy, which requires the dissolution of blood clots, is currently favoured over radiation and chemotherapy.

Just a handful of the most widely recommended procedures are.

- Magnetic resonance imaging (MRI). An MRI or CT scan may show any brain swelling or another disorder, such as a tumour, that is causing the symptoms.
- Spinal tapping (lumbar puncture). A small amount of cerebrospinal fluid (CSF), the protective fluid that protects the brain and spinal column, is removed using a needle inserted into your lower back. Infection and inflammation in the brain may be shown by changes in this fluid. CSF samples may also be checked to determine the virus or other infectious agent.
- Further laboratory studies. Viruses and other infectious agents may be found in blood, urine, or excretions from the back of the throat.
- EEG (Electroencephalography) (EEG). The electrical activity of your brain is recorded by electrodes attached to your scalp. A diagnosis of encephalitis may be made based on such irregular patterns.

*Corresponding author: Kommu Santhosh, Department of Biotechnology, Kakatiya University, Warangal, Telangana, India, E-mail: kommusanthosh99@hotmail.com

Received February 28, 2021; Accepted March 15, 2021; Published March 25, 2021

Citation: Santhosh K (2021) Diagnosis and Prevention of Brain Infections. J Neuroinfect Dis 12: 323.

Copyright: © 2021 Santhosh K. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

A biopsy of the brain. A small sample of brain tissue can be removed for examination on rare occasions. Only if problems are getting worse and medications aren't working is a brain biopsy recommended.

References

1. Modi G, Pillay V, Choonara YE (2010) Advances in the treatment of neurodegenerative disorders employing nanotechnology. *Ann N Y Acad Sci* 1184: 154-172.
2. Folch J, Petrov D, Etcheto M (2016) Current research therapeutic strategies for Alzheimer's disease treatment. *Neural Plast* 258: 157-180.
3. Singh N, Pillay V, Choonara YE (2007) Advances in the treatment of Parkinson's disease. *Prog Neurobiol* 81: 29-44.
4. Grossman AW, Broderick JP (2013) Advances and challenges in treatment and prevention of ischemic stroke. *Ann Neurol* 74: 363-372.