

Neurodegenerative Diseases (ND)

At present, we are aware of more than 100 types of neurodegenerative diseases.

Characteristics

The disease is characterised by the progressive decrease in neurons in specific parts of the brain resulting in a functional deterioration of affected areas.

The reason for this decrease in neurons in neurodegenerative diseases is unknown.

In fact, diseases where there is a known reason for the decrease in neurons are not considered to be neurodegenerative diseases.

Those over the age of 65 are most at risk, around 50% of cases.

Risks

The main factor in developing this kind of disease is age.

Increased life expectancy means that the numbers affected are likely to double over the next few years.

It is at present the third main health problem in Spain.

Treatment

At present there are various treatments which relieve symptoms, but as of yet, there are no treatments available that have been proven effective in stopping the progression of neurodegenerative process.

There is also no preventative treatment available at present for any neurodegenerative disease.

Research

The recent advances in neurobiological research bring us closer than we have ever been to understanding the mysteries of neurodegenerative diseases and developing effective treatments.

At present, research is being carried out to prevent, slow down or stop neurodegeneration, it is a possibility that the benefits from this research will be available in the medium term. Also, research into mother cells brings hope that there is a possibility of replacing lost neurons and eliminating symptoms.

Classification

Classification of the more than 100 ND is very complicated due to the fact that they are very closely related from a clinical and anatomicopathological point of view, some diseases have a variable first diagnosis for this reason.

Causes

In many cases the cause of the neurodegeneration is unknown. The importance of environmental factors and genetics is constantly being debated.

Most ND are sporadic and cases that are affected by genes are minimal.

With regards to sporadic diseases, environmental factor should always be sought as the cause of the pathology (contaminants, infection etc.). With regards to ND this test has shown negative, for this reason it is thought that etiology is not completely genetic or completely environmentally caused and therefore that it is probably in varying degrees the combination of both factors.

Social-economic repercussions

EN has serious social-economic repercussions.

Throughout the illness we should take into account the impact on the patient's mental state, the decline in quality of life, the inability to work, loss of social skills, the physical and mental load of the patients' caregivers and the steep economical expenses for health care.

Types of ND

The main types of ND with regards to frequency and level of importance:

1. Alzheimer's Disease
2. Parkinson's Disease
3. Amyotrophic lateral sclerosis
4. Huntington's Disease

1. ALZHEIMER'S DISEASE (AD)

Dementia is the deterioration of intellectual functions (memory, capacity to speak and understand, sense of direction, changes in mood or behaviour etc.) which impede daily life.

The main cause of senile dementia (over 65 years old) is Alzheimer's disease, affecting an estimated 60-70% of all cases of dementia.

Death is usually a result of complications due to being bed bound.

Life expectancy is significantly reduced as a result of Alzheimer's, with a survival rate of 5-10 years since first showing symptoms.

Research suggested that women are worst affected, which does not seem to be due solely to the fact that they have a higher life expectancy.

In Spain, around 500.000 people are affected by this disease (FEEN, 2009).

An early diagnostic helps provide a better quality of life for the patient and their caregivers.

2. PARKINSON ´S DISEASE (PD)

Clinically characterised by tremor, muscle rigidity and slow movements, it can also cause immobility.

It is the second most important degenerative disease of the nervous system. In Spain, around 80.000 people are affected by this disease (Source INE, 1999 and FEEN 2009).

In PD neurons are lost from the black substance in the brain that produce and release dopamine. Dopamine is a neurotransmitter that enables us to move.

Pharmaceutical treatments help control symptoms and surgery offers some important benefits.

3. Anyotrophic Lateral Sclerosis (ALS)

Affects cortical functions, whilst the mental capacity and the mental state remain unaltered.

The disease causes overall physical weakness as well as a deterioration in communication skills, which affect both the mental and social state of the patient. Frequently causing depression, anxiety and anguish as well as other specific symptoms which difficult the organism's defensive response.

Initial symptoms include problems walking, writing and/or speaking, sooner or later all strength is lost and it is not possible to move. Once the chest muscles weaken, it is difficult to breath. Most people suffering with ALS die from breathing difficulties.

More common in men (1.7 to 2 men for every woman).

Normally appears in mid to later life (between 30 and 70 years old).

The survival rate is 3 years

The disease causes both physical and emotional suffering.

In Spain, around 3.000 people are affected by this disease (Source FEEN, 2005).

4. HUNTINGTON ´S DISEASE (HD)

A hereditary disease which causes deterioration of nerves cells in the brain.

Patients are born with the defective gene, but symptoms do not appear until after 30 or 40 years.

Initial symptoms include uncontrolled movements, clumsiness and problems with balance. As the disease develops, difficulty in walking, speaking and swallowing affect the patient.