ABOUT ANTI-NMDA RECEPTOR ENCEPHALITIS

FULL MEDICAL NAME:
Anti-N-methyl-D-aspartate receptor encephalitis

YEAR DISCOVERED:
2009

BRIEF DESCRIPTION:
Anti-NMDA Receptor Encephalitic is a recently discovered (2009) life-threatening autoimmune disorder associated with multi-stage neuro-psychiatric symptoms.
The term "Encephalitis" means inflammation of the brain.

CAUSE:
Most cases of Anti-NMDA Receptor Encephalitis are caused by a Teratoma Tumour (also known as a dermoid cyst).
This type of tumour is non-cancerous, but it made up of different cells that can be found anywhere in the body, including teeth, hair, fat, muscle and brain tissue.
It is thought that antibodies are initially formed against NMDA receptors found within tumour, and then attack similar-looking receptors in the brain, thinking that it is another tumour.
The role of the tumour in producing Anti-NMDA receptor encephalitis is not fully known and is the subject of ongoing research.
What is known is that most tumours associated with anti-NMDA receptor encephalitis contain neural tissue (tissue containing cells identical to that found in the brain), and NMDA receptors.

DIAGNOSIS:
A diagnosis of anti-NMDA receptor encephalitis requires antibodies to be detected in the body fluids of someone with symptoms consistent with anti-NMDA receptor encephalitis. Antibodies may be found in either blood or spinal fluid.

PART OF THE BRAIN AFFECTED:
The part of the brain that is affected are the "NMDA Receptors".
NMDA Receptors are responsible for: learning, memory, judgement, perception of reality, human interaction, the formation and retrieval of memory, control of unconscious activities (such as breathing, swallowing etc).
The NMDA Receptors are the part of the brain that is "knocked out" when you have a general anaesthetic.

SYMPTOMS:
The symptoms often start as psychiatric symptoms such as hallucinations, memory loss, concentration issues, intense anger and aggressive behaviour and self-destructive behaviour. It them progresses quickly to physical symptoms, including difficulty or complete inability to speak, numb limbs, muscle spasms, rapid heart rate, high temperatures, difficulty swallowing, difficulty breathing, seizures and comas.
A lot of the symptoms are as a direct result of the brain misfiring, which makes it harder for Doctors to determine the cause of the problem, as unless they are specifically looking for and testing for Anti-NMDA Receptor Encephalitis, there is often no logical cause for the symptoms.

TREATMENT:
This disease is still considered rare, and very new in medical terms, which means medical research is still very new and un-tested.
Treatment options is still widely debated around the globe, with a high degree of variation from one Doctor to the next.
The treatment is still considered "experimental" in some countries.
There is no known way to isolate one type of antibody within a person's immune system, so it is not possible to kill off just the problem antibodies.
Treatment usually starts with IV Steroids and IV Plasma infusions (donations from healthy people, full of good antibodies, to try and drown out the problem antibodies).
Some patients then go on to have a type of chemotherapy called Rituximab, which wipes out a large number of antibodies (both good and bad).
Many other medications may also be required, including those used to control blood pressure, stop seizures, ease anxiety, improve sleep, and to treat hallucinations or abnormal behaviours.
Each round of treatment (both plasma and chemotherapy) can vary in duration from 5 days up to a period of months on and off.
Some patients require regular treatments (of plasma, steroids and/or Rituximab), every few months, to try and prevent relapse, or to help with continued symptoms.

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RECOVERY & PROGNOSIS:

Recovery is generally slow and may occur over months or even years. The recovery process is often complicated by many ups and downs, and by fears of relapse or re-emergence of symptoms.

It is known that the majority of patients continue to experience symptoms after they have had treatment - anywhere from months to years after treatment. This does not mean that the treatment hasn't worked, it is simply an unfortunate characteristic of this disease.

Full Recovery can take many years after the last episode.

The disease can be fatal, with most patients dying due to cardiac arrest (stopping of the heart), or from complications associated with long stays in hospitals and the use of powerful immune suppressing medications (which makes people more susceptible to serious infections).

Some patients may not recover completely, and friends and family may notice changes in the patient's personality or some other aspect that is different from before the onset of illness.

Some patients go on to fully recover after a few years.

RELAPSE:

Even after successful treatment, there is a high chance of relapse, and no known way to prevent this.

There is also no known way to predict which patients will suffer a relapse.

There is no way to predict when a relapse might occur.

Immune suppressing medications may be taken for prolonged periods of time (even after recovery) to prevent a relapse, although the success of this is widely debated.

Because of the lengthy recovery period, and possibility of a number of relapse episodes, this makes it very difficult for people with this disease to return to work and normal life, or plan for the future.

When relapses occur, they usually involve the same symptoms experienced during the first attack, and may not all occur at the same time, or in the same order as before.

KNOWN SYMPTOMS OF ANTI-NMDA RECEPTOR ENCEPHALITIS:

Fever	Language disintegration
Nausea	Reduction of verbal output
Diarrhoea	Echolalia - Meaningless repetition of another person's words
Upper respiratory-tract symptoms	Mutism
Anxiety	Echopraxia - Meaningless repetition of another person's movements
Insomnia	Catatonia
Fear	Abnormal physical movements
Grandiose delusions	Unsocial behaviour
Paranoia	Violent behaviour
Mania	Breathing instability
Hyper-religiosity	Autonomic instability
Mania	Decreased consciousness
Social withdrawal	Hypoventilation – slow breathing
Short term memory loss	Headache
Memory deficits	Aphasia – impairment of language, affecting the production or comprehension of speech, the ability to read or write
Psychosis	Dystonia – abnormal muscle tone resulting in muscular spasm and abnormal posture
Seizures	Oro-lingual-facial dyskinesia
Involuntary movements of body and limbs	oculogyric crisis – eyes rolled upwards or to the side
Hyperthermia (high temperature)	Tachycardia – rapid pulse
Hyper salivation	Hypertension – high blood pressure
Bradycardia – abnormally slow heart rate	Hypotension – low blood pressure
Urinary incontinence	Cardiac pauses
Intracranial pressure	Visual hallucinations
Auditory hallucinations	Inappropriate behaviour
Hyperphagia – an abnormally great desire for food, excessive eating	Inability to interpret sensations – unable to recognise things as a result
Encephalitis lethargia – chronic fatigue	Cognitive disturbance – confused thinking
Disinhibited behaviour	Loss of consciousness