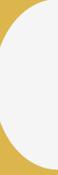


AUTOIMMUNE ENCEPHALITIS



- **Autoimmune encephalitis** refers to a group of conditions that occur when the body's immune system mistakenly attacks healthy brain cells, leading to inflammation of the brain.
- Neurologic symptoms may include impaired memory and cognition, abnormal movements, seizures, and/or problems with balance, speech, or vision.
- Psychiatric symptoms may include psychosis, aggression, inappropriate sexual behaviors, panic attacks, compulsive behaviors, euphoria or fear. Symptoms may fluctuate, but often progress over days to a few weeks. Symptoms can progress to loss of consciousness or even coma

General symptoms

Autoimmune encephalitis may be associated with antibodies to proteins on the surface of nerve cells, or within nerve cells. Some of these proteins are involved in passing signals between nerve cells. In some cases it occurs in association with cancer (a paraneoplastic syndrome).

- **NMDA receptor**
- Syndromes/clinical presentation-
Psychiatric features ,seizures ,cognitive impairment ,movement disorder, dysautonomia fluctuation in the consciousness level
- Tumor association-Tumor found in 50% of young women cases mostly ovarian teratoma
- Brain MRI -Normal or little subcortical or cortical inflammation
- CSF – lymphocytosis in early stages
- Outcome -**75-80% improvement** or full recovery .Amnesia for the entire illness for almost all patients
- eeg. -extra delta brush

Antibodies against synaptic receptor

Clinical presentation-
Limbic encephalitis
and possible
psychiatric features

Tumor association –
Lung, breast,
thymoma

Brain MRI- Abnormal
medial temporal lobe
with increase in the
FLAIR signal

CSF-lymphocytosis

Outcomes –variable
(depending on the
stage of the tumor)

*AMPA is an
ionotropic
transmembrane
receptor for
glutamate that
mediates fast
synaptic
transmission*

GABA α Receptor



Clinical presentation-
Encephalitis with high
antibody titers. Stiff –
person syndrome



Tumor association-Lung
,breast and thymoma



Brain MRI –Abnormal in all
cases with increase in flair
signal and rapid
progression to atrophy



Outcomes-Majority of
patients have a favourable
response .

Clinical presentation –limbic encephalitis associated with seizures

Tumor associaton –Lung and neuroendocrine

Brain MRI-Medial temporal lobe with increase in FLAIR signal

CSF- cellular lymphocytosis

Outcome- 50% improved

GABA_b receptor

Syndrome –
Ophelia
syndrome
encephalitis

Tumor
association-
Hodgkins
lymphoma

MRI-Abnormal
in $\frac{3}{4}$ of patients
with variable
increase in
T₂/FLAIR signal

Outcome – Full
recovery with
oncologic
treatment

mGluR5
(*Metabotropic
glutamate
receptor 5*)

Dopamine 2 receptor

Clinical presentation –Basal ganglia encephalitis ,with movement disorder ,psychosis

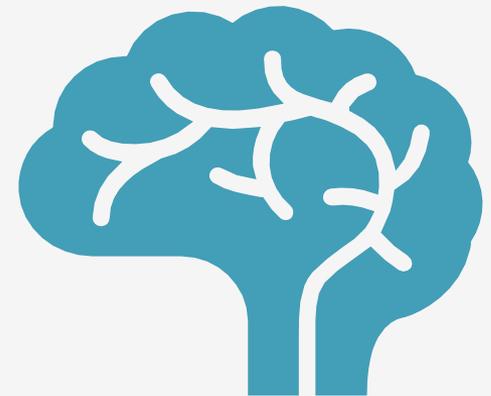
Tumor association –Not yet reported

Brain MRI-Abnormal with FLAIR signal increase in caudate, putamen, globus pallidus and substantial nigra in 50 percent of cases

Outcomes-Variable with full recovery in 50% cases

Glycine receptor

- Syndrome –Stiff person syndrome , progressive encephalomyelitis with rigidity and myoclonus ,limbic encephalitis
- Tumor association- Thymoma
- Brain MRI –Abnormal with white matter lesion ,increase of flair signal or atrophy
- CSF- pleocytosis in half of the cases
- Outcome –**more than 90 %** improved with relapses in **less than 10%**



- LGI1- protein secreted by hippocampal neurons largely associated with epilepsy
- Clinical presentation-limbic encephalitis with tonic –dystonic seizures and hyponatremia and CJD like disease
- Tumor association –Variable
- Brain MRI –Abnormal medial temporal lobe with **increase** in flair signal in **60% of patients**
- Outcome-**80% full recovery** with mild deficits.

*Antibodies
against
synaptic
proteins or
other cell
surface
proteins*

Clinical presentation –Neuromyotonia and Morvans syndrome with possible psychiatric features ,GBS like syndrome

```
graph TD; A[Clinical presentation –Neuromyotonia and Morvans syndrome with possible psychiatric features ,GBS like syndrome] --> B[Tumor association –Thymoma]; B --> C[Brain MRI-medial temporal lobe with increase in flair signal]; C --> D[Outcome-80% have substantial improvement];
```

Tumor association –Thymoma

Brain MRI-medial temporal lobe with increase in flair signal

Outcome-80% have substantial improvement

Caspr 2

DPPX

Clinical symptoms - encephalitis associated with severe gastrointestinal symptoms

Tumor association - not yet reported

Brain MRI-normal in majority of patients are abnormal with no specificities in **30% of patients**

CSF - pleocytosis

Outcome - **50% recovery**

Clinical presentation-stiff person syndrome ,cerebellar ataxia, encephalitis

Tumor association-thymoma ,small cell lung cancer

Brain MRI –abnormal characteristic in median temporal lobe

GAD65
(intracellular receptor)

- Treatment may involve intravenous immunosuppressive therapy, and tumor removal when necessary. Early treatment decreases the likelihood for long-term complications, speeds recovery, and reduces the risk of recurrence (relapse). If not treated, the condition can lead to progressive neurologic deterioration and loss of life.[3]

Treatment



THANK
YOU