

## Introduction

- Antibody-associated encephalitides can be broadly classified into 2 categories according to the location of their neuronal antigens:
  - Paraneoplastic encephalitis associated with antibodies targeting intracellular antigens
  - Encephalitis associated with antibodies against neuronal cell-surface or synaptic receptors
- Anti-Hu related Paraneoplastic Neurological Syndrome (PNS) is one of the most common paraneoplastic-associated neurological syndromes .
- While the primary clinical manifestations include sensory neuropathy, cerebellar ataxia, and limbic encephalitis , only rare reports exist regarding psychiatric manifestations and even fewer report psychosis specifically.
- Literature review carried out on PubMed, PscINFO, and Embase using the keywords (Anti-Hu) AND (Psychosis OR Hallucinations OR Schizophrenia OR Schizoaffective)

## Discussion

- Presenting symptoms are typically neurological and rarely psychiatric.
- When the primary symptomatology is psychiatric the most common psychiatric symptoms are affective disturbances and depression.
- Psychotic symptoms are seldom reported in the literature, but can include hallucinations and/or delusions
- In some PNS cases, tumor removal can improve the symptoms.
- Other treatments include corticosteroids, plasma exchange, IVIG, immunosuppressive chemotherapeutics (cyclophosphamide, tacrolimus, cyclosporine) and B-cell targeting drugs such as Rituximab.
- In our cases, corticosteroids were used initially with antipsychotics to manage residual psychosis.

## Diagnostic criteria for definite autoimmune limbic encephalitis

Diagnosis can be made when all four<sup>2</sup> of the following criteria have been met:

1. Subacute onset (rapid progression of less than 3 months) of working memory deficits, seizures, or psychiatric symptoms suggesting involvement of the limbic system
2. Bilateral brain abnormalities on T2-weighted fluid-attenuated inversion recovery MRI highly restricted to the medial temporal lobes<sup>1</sup>
3. At least one of the following:
  - CSF pleocytosis (white blood cell count of more than five cells per mm<sup>3</sup>)
  - EEG with epileptic or slow-wave activity involving the temporal lobes
4. Reasonable exclusion of alternative causes

Adapted from Graus et al 2016

Both patients demonstrated subacute onset of psychiatric symptoms. Only one patient showed bilateral T2 abnormalities in the temporal lobes, however the presence of other brain pathology in the second case may have overshadowed the findings. Finally, both patient demonstrated positive Anti-Hu antibodies as well as showed bilateral temporal slowing on EEG.

## Case Presentations

- 24 year old Hispanic female with no past psychiatric or medical history was brought to the Psychiatric ED for disorganized behavior, persecutory delusions, and auditory hallucinations. She was discharged two days prior from medical unit after confirmed Anti-Hu encephalitis on CSF analysis. MRI at the time showed increased T2 signal of the bilateral parieto-occipital cortices. CT chest, abdomen, and pelvis were negative for masses. Ultrasound demonstrated hyper-echoic mass of the uterine fundus. EEG showed bilateral temporal slowing and disorganization of background rhythms. Psychotic symptoms were managed with Paliperidone.
- 66 year old Hispanic Female with no past psychiatric history was brought to the ED for command auditory hallucinations to harm herself and persecutory delusions of someone coming to kidnap her daughter. First episode psychosis work up revealed positive Anti-Hu on blood test. Xray of her chest did not demonstrate masses. MRI of the brain showed cavernous hemangioma , but no hyperintensities of the parieto-occipital areas. EEG showed mild bilateral temporal slowing. Psychotic symptoms were managed with Risperidone.

## Conclusion

- It is important to consider anti-Hu encephalitis as a diagnosis in patients with first episode psychosis as well as any other autoimmune syndrome.
- These cases emphasize the importance of a full medical work-up for first episode psychotic symptoms as well as maintaining a wide differential.
- Given the increased association between PNS and psychiatric illness, more emphasis and further research is warranted.

## References

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