



Treatment Options for Catatonia in Cancer: Case Series and Literature Review



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Introduction & Literature Review

- Catatonia is a syndrome of neuropsychiatric symptoms, seen in mood, psychotic disorders, and medically complex individuals.
- Few studies have identified cases of catatonia with cancer as primary etiology.** Literature usually describes paraneoplastic or autoimmune encephalitis. **Management is typically centered on treatment of autoimmune disease, rather than symptom management [1-2].** Literature review identified **6 cases using ECT as treatment of catatonia** in anti-NMDA R encephalitis; one of these cases also identified a primary tumor [3].
- In cases of catatonia in individuals with cancer, without paraneoplastic encephalitis, most case reports identify structural brain abnormalities, like a tumor, as the primary etiology of catatonia [4-5]. In these cases, **benzodiazepines are the primary treatment option.**
- More evidence is needed to identify alternative treatment options for catatonia in individuals with cancer. Regardless of cause, **a variety of treatment options for catatonia should be considered.**

Case #1: Treatment with ECT

Demographics: 49 yo M with no past psychiatric history, initially complaining of anxiety, memory loss and decline in functioning for one year.
Cancer diagnosis: Stage III testicular seminoma
Clinical Presentation: Initially presented with anxiety and confusion. Developed agitation, stereotypy, verbigeration, negativism, waxy flexibility and catalepsy. Medical workup later revealed cancer diagnosis. Negative paraneoplastic panel and MRI Brain.

Treatment Course:

- Managing anxiety**
 - Lithium, olanzapine, lorazepam
 - Switched to Depakote
- Medical hospitalization**
 - Diagnosis of cancer
 - IV steroids and IVIG.
- Treating Catatonia**
 - IV Lorazepam and memantine
 - Chemotherapy x5 months
 - Started on escitalopram and buspirone.
- Treating Depression**
 - Initiated ECT
 - Lorazepam TID daily.

Treatment for Paraneoplastic or Autoimmune Encephalitis [1-2]

- Treatment of Cancer**
 - Surgical resection of tumor
 - Chemotherapy
- First line Immunotherapy**
 - High dose steroids
 - Intravenous gamma globulin (IVIG)
 - Plasma exchange (PE)
- Second line Immunotherapy**
 - Rituximab
 - Cyclophosphamide
 - Methotrexate
 - Azathioprine
 - Monoclonal antibody

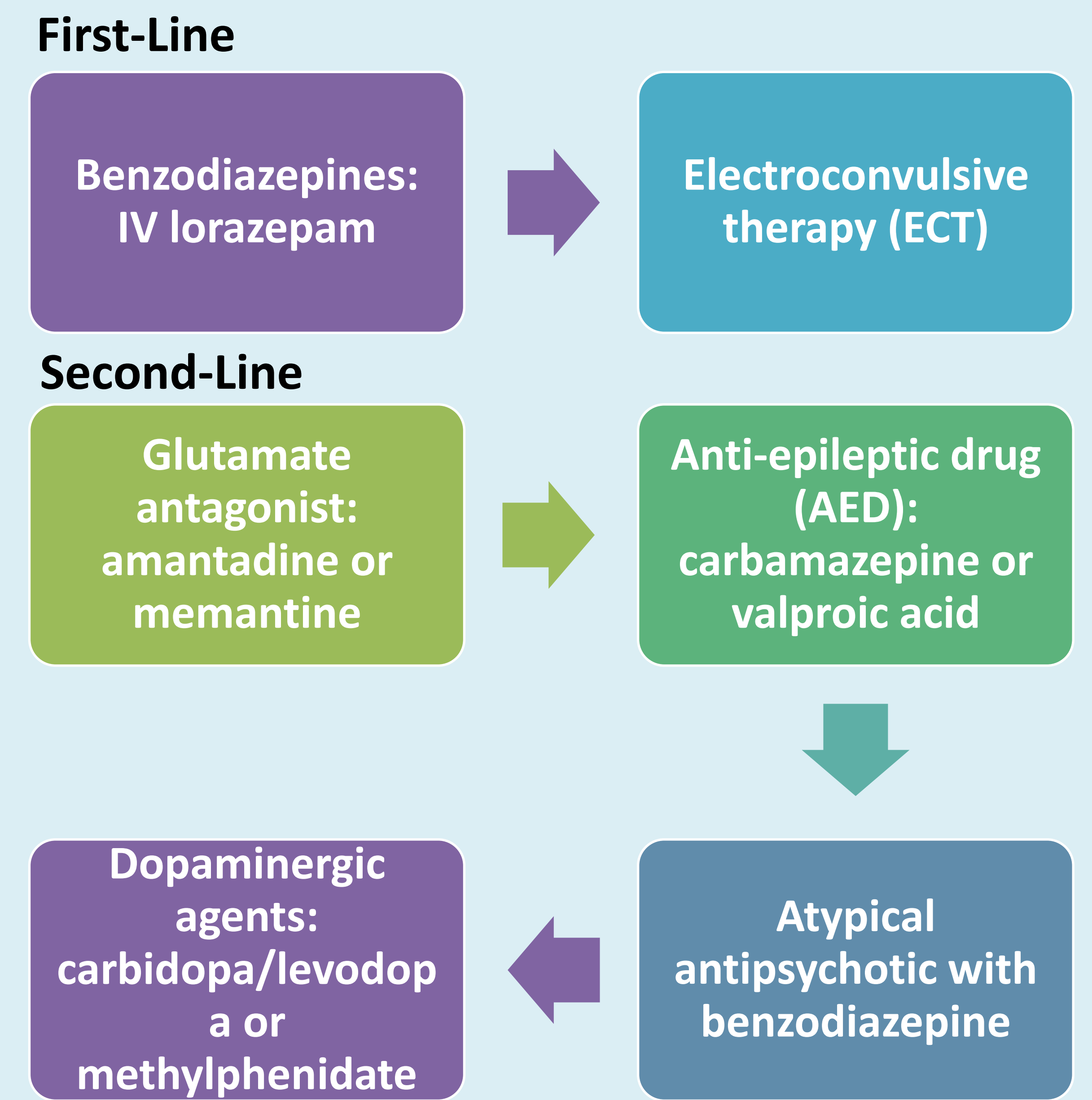
Case #2: Treatment with Benzodiazepines and Memantine

Demographics: 65 yo M with no past psychiatric history, initially complaining of anemia and fatigue.
Cancer diagnosis: Stage IV gastric adenocarcinoma
Clinical Presentation: First diagnosed with cancer. Soon after, developed agitation and erratic behavior. With initiation of chemotherapy, developed mutism, negativism, decreased oral intake, apraxia. Negative paraneoplastic panel and MRI Brain.

Treatment Course:

- Managing Agitation**
 - Haloperidol → worsened catatonia
- Managing Catatonia**
 - Lorazepam started
 - ECT initiated
 - Mirtazapine added for maintenance
- Cancer Treatment**
 - Chemotherapy → worsened catatonia
- Treating Catatonia**
 - Restarted lorazepam
 - Augmentation with memantine
 - Maintenance with mirtazapine

Treatment for Catatonia [3,6]



CYP Drug-Drug Interactions in Cancer

Hepatic isoenzyme	Cancer Treatment	Psychiatric Medications
CYP3A4	<ul style="list-style-type: none"> Tyrosine Kinase Inhibitors (TKI) Taxanes (paclitaxel, docetaxel) Cyclophosphamide 	<ul style="list-style-type: none"> Valproic Acid (inhibitor) Phenobarbital (inducer) Carbamazepine (inducer) Benzodiazepines (inducer) Modafanil (inducer)
CYP2D6	<ul style="list-style-type: none"> Tamoxifen Doxorubicin Vinblastine 	<ul style="list-style-type: none"> Fluoxetine (inhibitor) Bupropion (inhibitor) Paroxetine (inhibitor) Doxepin (inhibitor) Diphenhydramine (inhibitor)

References:
 1. Lancaster E. Autoantibody Encephalitis: Presentation, Diagnosis, and Management. J Clin Neurol. 2022 Jul;18(4):373-390
 2. M.R. Chapman, H.E. Vause Anti-NMDA receptor encephalitis: diagnosis, psychiatric presentation, and treatment. Am J Psychiatry. 168 (3) (2011), pp. 245-251
 3. Coffey MJ, Cooper JJ. Electroconvulsive Therapy in Anti-N-Methyl-D-Aspartate Receptor Encephalitis: A Case Report and Review of the Literature. J ECT. 2016 Dec;32(4):225-229.
 4. Franssen A, Sinaert P. Temporal glioblastoma presenting as catatonia. BMJ Case Rep. 2019 Mar 4;12(3):e224017.
 5. Shelton YI, Miller MB. Catatonia relieved by oral diazepam in a patient with a pituitary microadenoma. Psychosomatics. 1986 Dec;27(12):860-2.
 6. Beach SR, Gomez-Bernal F, Huffman JC, Fricchione GL. Alternative treatment strategies for catatonia: A systematic review. Gen Hosp Psychiatry. 2017 Sep;48:1-19.