Catatonia following Autologous Tumor-Infiltrating Immunotherapy and IL-2 Infusions: A Case Report

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CASE

AB is a 59-year-old male with a history of mild depression and recurrent metastatic oropharyngeal carcinoma.

 8-day protocol of lymphodepletion with cyclophosphamide and fludarabine, then infusion with TIL and 6 doses of IL-2 Received several doses of IV meperidine for pain
 At discharge, he appeared close to baseline Later that evening, he exhibited increasingly unusual behavior: fixating on colors, mimicking the sound of a heart monitor, and intermittently crying and swearing
 BP was 170/60s, HR was 170s, and afebrile Self-dialoguing, repetitive movements, and freezing CMP, CBC, thyroid studies, viral serology, and urine toxicology were noncontributory
 Suspicion for immunotherapy neurotoxicity. Received IV dexamethasone and started on levetiracetam MRI brain w/ and w/o contrast, LP, and spot EEG unrevealing
 Hospital day 2, consult for altered mental status Normal vital signs; diminished sleep, poor oral intake, and urinary incontinence Score of 16 on Bush Francis Catatonia Rating Scale
 Modest improvement with 2mg IV lorazepam trial 1.5mg tid lorazepam scheduled with dramatic results
 After 8 days of treatment, he was close to cognitive baseline Discharged on a lorazepam taper
 Tapered lorazepam over the course of 5 weeks No return of overt symptoms of catatonia

HEALTH

BACKGROUND

While there are many examples of catatonia associated with autoimmune conditions and encephalitis, few articles have recorded associations with immunotherapy treatments. We describe a case of catatonia following Autologous Tumor-Infiltrating Immunotherapy (TIL) and Interleukin-2 (IL-2) therapies.

TIL involves removing an individual's own immune cells, manipulating them to respond directly to the target cells, and then administering them back into the individual. IL-2 is a cytokine involved in T cell growth, activation, and differentiation that can stimulate regression in certain cancers.

DISCUSSION

This case highlights catatonia as a potential adverse effect from TIL and IL-2 Infusions in cancer treatment. The temporal proximity of symptom onset to the infusions supports a connection.

- There is a known association between aberrations in pro-inflammatory cytokines and psychiatric illness, including soluble IL-2 receptors.¹
- An elevation in pro-inflammatory cytokines can result in a hypoactive motor state, such as catatonia.²
- The neurotoxic effects of an inflammatory response may be responsible for the catatonic state.²
- Systemic inflammation would represent a more unusual mechanism as most non-psychiatric presentations of catatonia are related to infectious or autoimmune processes.²

AB did not respond to systemic steroids and medical workup did not indicate an infectious etiology. Other notable points in this case are AB's lack of past psychiatric history, aside from mild depression, and the sudden onset of symptoms with quick resolution.

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CONCLUSION

- As it only depicts a single event, the generalizability of risk for catatonia associated with these therapies is unclear.
- The rapid improvement in symptoms and effectiveness of treatment with lorazepam alone is encouraging for future cases.

REFERENCES

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AB's initial score on the Bush-Francis Catatonia Rating Scale	
nobility/stupor	1
tism	1
ring	2
turing/catalepsy	2
opraxia/echolalia	2
bigeration	2
gativism	1
xy flexibility	3
hdrawal	2
al Score	16

• This case uniquely describes catatonia as an adverse event associated with TIL and IL-2 therapies and potentially implicates cancer-focused immunotherapy in general.