

# Behavioral Dysregulation Exacerbated by Intrathecal Baclofen In A Patient With Severe Traumatic Brain injury

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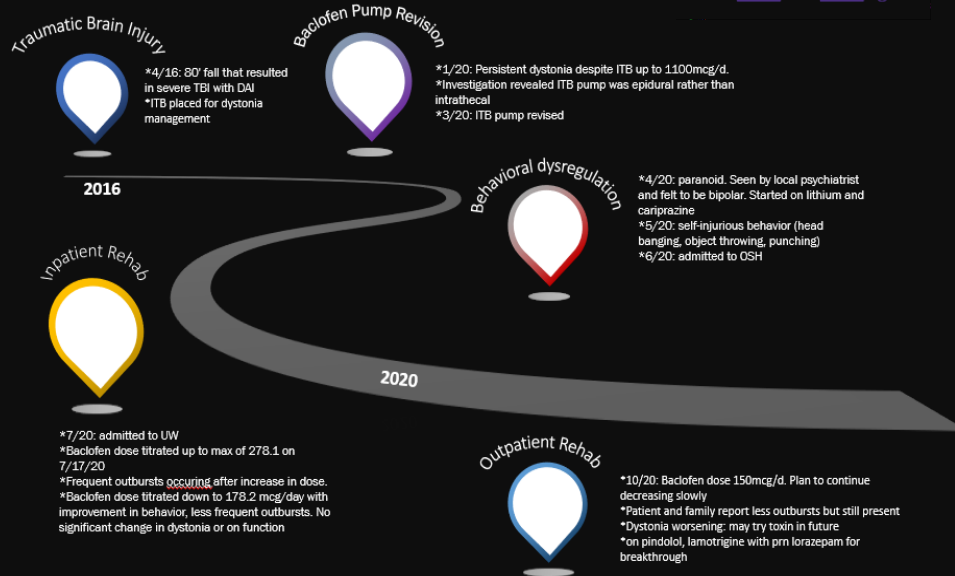
## Case Description

This is a 19-year-old male with a remote history of severe traumatic brain injury (TBI) with an intrathecal baclofen (ITB) pump for dystonia management. Given concern for lack of efficacy despite increasing doses of ITB, his catheter was evaluated and found to be epidural. He underwent catheter revision and later had his pump up-titrated as an outpatient. During this time, he experienced agitation, paranoia and hallucinations concerning for primary psychotic diagnosis, as well as increasing dystonia and subsequent functional decline.

Despite psychiatric medications changes and increased ITB, he continued to exhibit both mood changes and dystonia. He was ultimately admitted for work up and later transferred to inpatient rehabilitation for functional impairments. Because the patient's family had noted mood instability correlated with ITB increase, his pump was down-titrated. As dose decreased frequency of outbursts as well as His dystonia and overall functional status improved as a result.



# Intrathecal Baclofen May Exacerbate Mood Instability in Patients with Traumatic Brain Injury



Timeline of patient's medical course onset of brain injury

## Management

- Behavioral dysregulation:
  - ITB doses were down titrated. He was also continued pindolol and lamotrigine. He has lorazepam for breakthrough behavioral outbursts
- Dystonia:
  - PT, OT, low dose ITB, plan for botox

## Discussion

- It is difficult to determine whether the patient's presentation can be explained by exacerbation of an underlying mood disorder from his remote TBI or increased levels of ITB after catheter revision.
- Only a handful of case reports have demonstrated episodes of baclofen-induced mania, but none in patients with TBI<sup>1,2,3,4</sup>.
- Baclofen is a GABA-B agonist that acts on the CNS. It increases rate of norepinephrine turnover and up-regulate serotonin receptors. GABA-B receptor stimulation affects dopaminergic neuron firing rate. Mania is associated with variations in dopaminergic transmission in different regions of the brain. Thus, baclofen may increase susceptibility to

## Conclusion

There is currently little research on ITB and its psychiatric effects on patients with severe TBI. ITB may exacerbate mood instability in patients with TBI and be mistaken for primary psychiatric disorders; however, more evidence is needed to support this.

## References

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