Use of intravenous valproic acid loading in the emergency department for acute mania: case report and literature review

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Background

Acute episodes of mania are one example of clinical encounters that consult and liaison psychiatrists might be asked to treated agitated patients.

During these acute episodes of mania, patients can exhibit increased goal-oriented behavior, agitation/irritability, grandiosity and psychosis. This can compromise the safety of staff and other patients in the emergency department or medical units. Of particular import is the emergency department, which can be a healthcare setting with elevated rates of verbal and physical violence towards healthcare workers.

Consult and liaison psychiatrists are relied on for not only adequate treatment initiation for the patient's symptoms, but also for as needed medications to address agitation as it arises secondary to acute mania. Project BETA recommends utilizing second generation antipsychotics or benzodiazepines in the setting of agitation due to acute mania, however, there are other treatment modalities that can also serve a dual role as maintenance treatment.

Patient Information/ Course

42-year-old male with a past psychiatric history of bipolar disorder and alcohol use disorder.

Brought in by police after the patient's neighbors called due to yelling, destructive behavior and symptoms of psychosis.

As outpatient treatment, patient was prescribed valproic acid, olanzapine and escitalopram. Had multiple prior ED visits with subtherapeutic trough levels of valproic acid.

VPA level in the ED was noted to be 3.2.

Due to agitation, the patient received 10 mg of midazolam, 15 mg of haloperidol, 150 mg of diphenhydramine, 10 mg of olanzapine and 2 mg of lorazepam over 17 hours.

Received a loading dose of valproic acid at 20 mg/kg and needed no further PRN medications,

Medication Timeline

2058: Arrived at emergency department

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2131: Administered 5 mg IM midazolam, 5 mg IM haloperidol and 50 mg IM diphenhydramine

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0403 (day 2): Administered 5 mg IM haloperidol and 50 mg IM diphenhydramine

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0658 (day 2): Administered 5 mg IM midazolam, 5 mg IM haloperidol and 50 mg IM diphenhydramine

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1145 (day 2): Administered 10 mg IM olanzapine

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1459 (day 2): Administered 2 mg IV lorazepam

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1628 (day 2): Administered loading dose of 20 mg/kg of IV valproic acid

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1111 (day 3): Discharged to inpatient psychiatry without further as needed medications

Conclusion

While medications like benzodiazepines and both first- and second-generation antipsychotics are guideline-supported for agitation, when a patient is experiencing agitation secondary to mania, a loading dose of valproic acid at 20 mg/kg should also be considered. Intravenous administration is more common in settings frequented by CL psychiatrists, and loading doses can reduce the need for multiple scheduled administrations through the early phase in episode of care. Further, in our case, the patient had no further episodes of agitation requiring intramuscular administration, which decreases the risk of workplace violence towards emergency department staff.

It should also be noted that among patients who are experiencing mania, African American patients are less likely to be started on mood stabilizers like valproic acid that are first line. First and second-generation antipsychotics used to primarily treat an acute manic episode of bipolar disorder lead to higher levels of rebound bipolar depression for patients.

References

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