

Ventricular Fibrillation Arrest following Bupropion Overdose

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Introduction

- Bupropion is an antidepressant that works as a dopamine and norepinephrine-reuptake inhibitor.
- It is used with caution, as its side effect profile can be daunting when levels are supratherapeutic.
- The cardiac side effects are palpitations, dysrhythmia, chest pain, flushing, and hypertension or hypotension.

Case Description

- An adolescent female with depression presented after intentional ingestion of fifty 300 mg bupropion tablets.
- Initial electrocardiogram- normal QTc (396ms).
- She was admitted to PICU for monitoring. She developed status epilepticus, was intubated, and started on propofol drip and Keppra. Repeat electrocardiogram showed prolonged QTc (558ms).
- She subsequently developed WCT and VF pulseless arrest.
- CPR was initiated followed by defibrillation.
- Magnesium, sodium bicarbonate and lidocaine bolus at 1 mg/kg over 15 minutes administered followed by drip at 20 mcg/kg/min.
- Lidocaine discontinued after maintaining NSR for 24 hours with improved QTc (396 ms).
- She was extubated and transferred to a psychiatric facility.

Rhythm Analysis



Discussion

- Refractory arrhythmias induced by bupropion and similar serotonin/norepinephrine reuptake inhibitors (sNRIs) are not well documented.
- The current literature mainly cites prolongation of the QTc interval without significant progression to life threatening arrhythmia.
- Use of sodium bicarbonate as an antidote has limited data, but it has been used successfully in patients with tricyclic antidepressant overdose.
- Sodium bicarbonate in conjunction with the use of lidocaine was likely a lifesaving decision.
- Rhythm recognition and QTc calculation are paramount, as the use of alternative therapy with amiodarone would have worsened the QT interval.

Conclusion

- Bupropion is a commonly used anti-depressant. Clinicians should be wary of bupropion overdose as it can lead to refractory ventricular tachycardia and degenerate into ventricular fibrillation.
- We report successful treatment of VF arrest in a patient with bupropion overdose with sodium bicarbonate and lidocaine drips.

Disclosures

- Perez: Nothing to disclose.
- Panchangam: Nothing to disclose.