Summa Health™

Navigating Anxiety Treatment in Myasthenia Gravis Crisis with Prolonged QTc: A Consult-Liaison Case Report

Garrison Burky MD, Todd Ivan MD

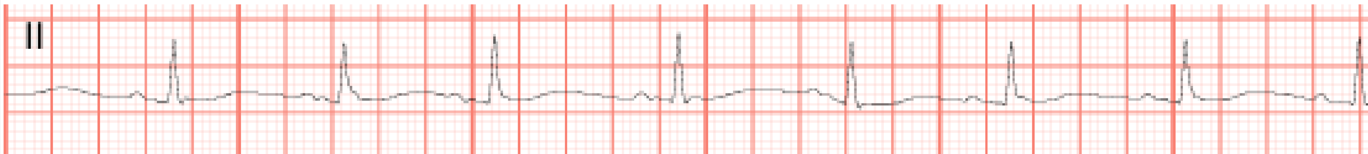
Summa Health System – Akron City Hospital, Akron, OH

Background

- Myasthenia gravis (MG) crisis requires careful medication selection to avoid worsening neuromuscular function
- Many psychotropic medications prolong QTc, increasing risk of torsades de pointes (TdP)[1]
- Management of anxiety in MG crisis with concurrent QTc prolongation in the literature is limited
- Physicians are often forced to balance competing cardiac and neuromuscular risks without clear guidelines

Case Presentation

- 75-year-old male with known myasthenia gravis admitted in crisis
- Hospital course complicated by nonsustained ventricular tachycardia
- QTc prolonged to 563 ms on EKG
- Escitalopram and hydroxyzine discontinued due to QTc risk
- Consult-liaison psychiatry consulted for anxiety management
- Persistent anxiety symptoms requiring pharmacologic intervention

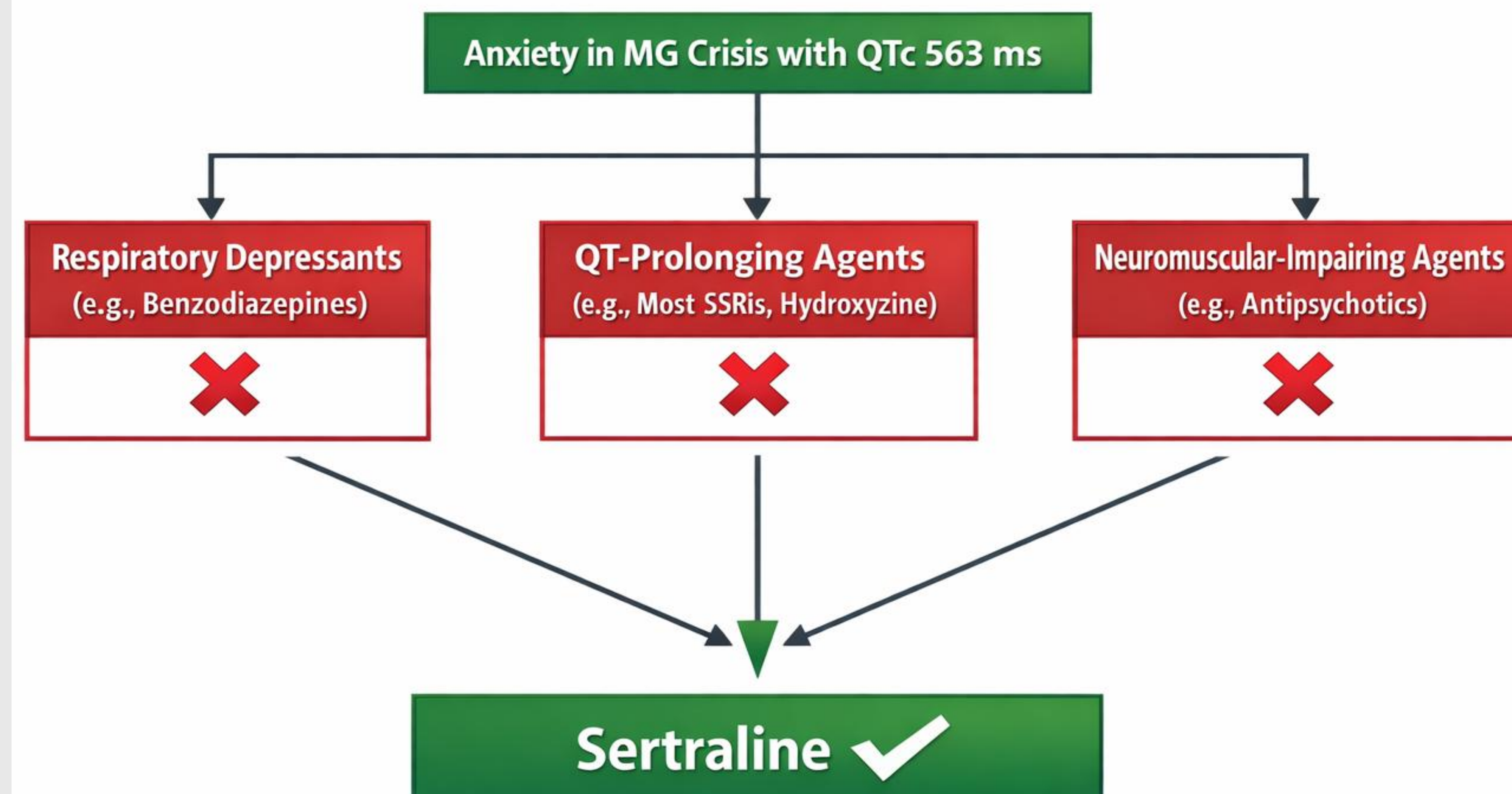


Lead II rhythm strip demonstrating QTc prolongation (QTc 563 ms, Bazett)

Treatment Approach

- Sertraline initiated at 25 mg daily
- Chosen for:
  - Minimal QTc-prolonging effect[1, 3]
  - Favorable safety profile in MG[2]
  - Established anxiolytic efficacy
- Close monitoring of QTc and neuromuscular status

Anxiety in MG Crisis with QTc 563 ms: Therapeutic Constraints



Tables adapted from: Dietle et al., 2015

Table 2. Psychiatric Drugs With a Higher Risk of QTc Prolongation at Therapeutic Doses

Drug Class	Drug Name
Typical antipsychotics	Thioridazine, haloperidol, chlorpromazine, pimozide
Atypical antipsychotics	Ziprasidone, iloperidone, quetiapine
SSRIs	Citalopram, escitalopram
TCAs and TeCAs	Amitriptyline, imipramine, maprotiline, nortriptyline, desipramine, clomipramine, trimipramine
SNRIs	Venlafaxine
Other antidepressants	Mirtazapine

QTc: corrected QT; SNRI: serotonin norepinephrine reuptake inhibitor; SSRI: selective serotonin reuptake inhibitor; TCA: tricyclic antidepressant; TeCA: tetracyclic antidepressant.

Table 3. Psychiatric Drugs With a Lower Risk of QTc Prolongation at Therapeutic Doses

Drug Class	Drug Name
Typical antipsychotics	Loxapine
Atypical antipsychotics	Olanzapine, risperidone, paliperidone, aripiprazole, asenapine, clozapine, brexpiprazole, lurasidone
SSRIs	Paroxetine, fluoxetine, sertraline, fluvoxamine
TCAs and TeCAs	Doxepin
SNRIs	Duloxetine, desvenlafaxine, levomilnacipran, milnacipran
Other antidepressants	Bupropion, vortioxetine, vilazodone, trazodone

QTc: corrected QT; SNRI: serotonin norepinephrine reuptake inhibitor; SSRI: selective serotonin reuptake inhibitor; TCA: tricyclic antidepressant; TeCA: tetracyclic antidepressant.

References

1. Dietle, Aimee. "QTc Prolongation with Antidepressants and Antipsychotics." *U.S. Pharmacist*, 40(11), no. 34–40, 2015. 2018 May 4. PMID: 29854391; PMCID: PMC5971403.
2. Jordan, Holly, and Natalia Ortiz. "Management of insomnia and anxiety in myasthenia gravis." *The Journal of Neuropsychiatry and Clinical Neurosciences*, vol. 31, no. 4, Oct. 2019, pp. 386–391, https://doi.org/10.1176/appi.neuropsych.18120383.
3. Rochester MP, Kane AM, Linnebur SA, Fixen DR. Evaluating the risk of QTc prolongation associated with antidepressant use in older adults: a review of the evidence. Ther Adv Drug Saf. 2018 Jun;9(6):297-308. doi: 10.1177/2042098618772979.

Discussion

- Anxiety management in MG crisis requires avoidance of:
  - Respiratory depressants[2]
  - QTc-prolonging agents[2]
  - Neuromuscular-impairing medications[2]
- Common first-line anxiolytics are frequently contraindicated[2]
- Sertraline represents a practical option due to minimal QT effect
- Mirtazapine may serve as an alternative if sertraline is not tolerated
- Highlights the importance of individualized risk-benefit analysis in medically complex patients

Conclusion

- This case demonstrates the need for tailored psychopharmacology in complex medical illness
- Sertraline is a viable anxiolytic in MG patients with prolonged QTc
- **Effective care requires balancing competing physiologic risks rather than following standard algorithms**
- More research is needed to guide treatment in overlapping cardiac and neuromuscular constraints

Clinical Pearls

- QTc >500 ms significantly limits psychotropic options
- Magnesium (used for TdP) may worsen MG weakness → indirect treatment conflict
- Always consider both:
  - Cardiac electrophysiology
  - Neuromuscular transmission
- Consult-liaison psychiatry plays a central role in weighing the risks and benefits of psychotropic medications in medically complex patients.