Adherence to Guideline-Directed Management of Drug-Induced Long QT Syndrome

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BACKGROUND:

- QTc prolongation is a consequence of many medications.
- QTc prolongation is denoted as a QTc of greater than 470 milliseconds (ms) in males and greater than 480 ms in females.
- Torsades de Pointes (TdP) can be a fatal complication of QTc prolongation and is treated with rapid administration of IV magnesium sulfate to prevent progression into ventricular fibrillation.
- 2010 AHA and the 2017 AHA/ACC/HRS guidelines state that in cases of severe QTc prolongation, QTc prolonging drugs should be promptly discontinued.

Objective of our study:
To assess if QTc prolongation is being recognized and monitored by clinicians at University Hospital in Newark, NJ.

METHODS:

Searched through EMR under inpatient medicine teams for total of 50 patients at random who have ECG documented QTc prolongation.

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Record age, sex, and QTc interval.

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Using search function: looked for any documentation of “QT prolongation” and/or “torsades”.

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Any QTc prolonging medications?(Cross-referenced with list of proven QTc prolonging medications)

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Document whether medications were "held", "initiated" or "maintained".

RESULTS:

Parameter	Value
Mean Age	57.87
Mean QTc	503
Documented in chart	16% (8/50)
Not documented in chart	84% (42/50)
On known QTc prolonging medications	24% (12/50)
On medications + undocumented	66% (8/12)
On medications + no held	91.6% (11/12)
Started on new QTc prolonging medications	20% (10/50)

CONCLUSIONS:

- Most patients with recorded QTc prolongation on ECG had no official documentation of this in their notes.
- QTc prolonging medications were not held for many of these cases.
- A subset of patients were started on medications that could further prolong QTc.
- We need to improve our recognition and documentation of QTc prolongation to avoid potentially catastrophic outcomes.

FUTURE DIRECTIONS:

- Conduct a demographic analysis: quantifying QTc differences based on race, sex, age.
- Conduct a subgroup analysis: quantifying different severities of QTc prolongation (mild, moderate, severe).
- Expand the study to include more patients to increase power and sample size.

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