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Short QTc in the Emergency Department

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Methods

- Retrospective Review of 13,494 EKGs (all ED patients who received an EKG for any reason)
- 6 months (April 2009 to September 2009)
- $QTc < 390\text{ms}$
- Exclusion Criteria - $HR < 60$, $HR > 100$, $QRS > 120\text{ms}$, non-sinus or paced rhythm
- $N = 145$ (281 found, 136 excluded)
- Mean age 39 ± 2
- Male - 71%

Result

- PMHx: HTN (22%), psych (17%), drug abuse (22%)
- 108 (75%) had QTc 380-390ms (95% CI 68-82%)
- 26 (18%) had QTc 370-379ms (95% CI 12-24%)
- 10 (7%) had QTc <370ms (95% CI 3-11)%
- 18% had abnl K (15% hyperK, 3% hypoK)
- 13% abnl Ca (5% hyperCa, 8% hypoCa)
- 4% hyperthermia
- 3% on medication which shorten QTc (<1% on Digoxin)
- 70% discharged, 95% CI 63-78%
- No cardiac events in ED

Discussion

- Shortened QTc interval occurs in approximately 1-2% of ED patients.
- Only a small number of ED patients with short QTc had electrolyte abnormalities, hyperthermia, or were on QTc shortening medications.
- Since majority of participants were discharged, further studies are needed to determine the rate of cardiac events in ED patients with shortened QTc.