O29

C O R R E C T E D Q T I N T E R V A L (Q T C) PROLONGATION IN ACUTE METHADONE OVERDOSE: CAN IT BE A GOOD PREDICTOR FOR IN-HOSPITAL ADVERSE OUTCOMES?

D Farsi,[1] A Mirafzal,[1] Z Azizi,[2] N Jamshidnejad,[2] M Rezai,[1] H Hassanian-Moghaddam[3]
[1]Department of Emergency Medicine; [2]Department of Medicine, Tehran University of Medical Sciences; [3]Department of Clinical Toxicology, Shahid Beheshti University of Medical Sciences, Teheran, Iran

Objectives: Corrected QT interval (QTc) prolongation is the most feared ECG complication of chronic methadone consumption. Previous studies have well shown the relationship between this ECG feature and Tosade de pointes, which may result in cardiac arrest. This study aims to elucidate the relation between detecting QTc prolongation in patients presenting to ED with acute methadone overdose and developing in-hospital adverse outcomes.

Methods: This is an analytic cross sectional study evaluating acutely methadone overdosed patients presenting to Loghman-Hakim poisoning center Emergency Department from April 2011 to March 2012. Electrocardiograms obtained at presentation were evaluated for QTc intervals and patients were being followed during admission for adverse outcomes. Patients with a history of consuming other QTc prolonging drugs or severe co-morbid conditions, with extremes of age, and with negative urine dipstick test results for methadone or positive for cyclic antidepressants were excluded. Regression analysis has been performed to find independent factors associated with in-hospital adverse outcomes.

Results: A total of 171 patients were enrolled in the study. Eight patients died during admission, and 163 patients were discharged with or without ICU admission. The mean QTc intervals for patients discharged without ICU admission and discharged with ICU admission was 432.00 ±39.5 and 477.36±39.3 respectively ($p<0.001$), but no significant difference was found between discharged patients from ICU and expired ones in mean QTc interval ($p=0.735$). In multivariate analysis, only QTc interval was independently associated with death (OR: 7.292), and only QTc interval and presenting GCS<9 showed independent association with life threatening respiratory depression (OR: 4.99 and 5.95, respectively), need for intubation (OR: 9.44 and 6.84, respectively), and need for ICU admission (OR: 12.11 and 9.58, respectively). There was no significant difference between chronic methadone users and recent non-users in the mean QTc interval or adverse outcomes ($p=0.892$ and $p=0.315$, respectively).

Conclusions: There was a significant association between QTc prolongation and in-hospital adverse outcomes in this study. Based on patient's history, no difference was found between chronic consumers and those without history of recent consumption of methadone in the acute setting in QTc intervals or clinical outcomes, and this finding may indicate that QTc prolongation potential to predict outcome may have utility in both groups. It is possible that future studies can even create a decision rule based on this feature in methadone overdose.