26398 - QT INTERVAL AND T WAVE DISPERSION ASSOCIATED WITH CHRONIC METHADONE THERAPY

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INTRODUCTION: Torsades de pointes has been reported in patients receiving high doses of methadone. It is believed that prolongation of the corrected QT interval (QTc) > 500 msec is predictive of Torsades (1,2). Current literature also suggests that wide T wave dispersion correlates better with the risk of developing Torsades (3). The objective of this study is to determine the prevalence of QT prolongation and transmural dispersion of repolarization (TDR) across the myocardial wall, as measured by T wave dispersion, in chronic pain patients receiving either chronic methadone or opioid therapy.

METHODS: It is a prospective study in which 64 chronic pain outpatients currently taking methadone (group M) or other opioids (control group C) were recruited. For all patients, an ECG prior to and 2 months after the start of the opioid therapy were collected. The measured corrected QT interval (QTc) was estimated as QT Interval (msec) divided by the square root of the preceding R-R interval (msec). A QTc > 500 msec was considered to be prolonged. TDR was measured in leads II and V5 as the time interval between the peak and the end of the T wave (Tp-e) (4). Other collected variables included age, sex, and the use of concomitant medications.

RESULTS: The results of the 2 months follow up ECG are presented here. There is a significant prolongation of both QTc and Tp-e V5 in group M compared with group C ($P < 0.05$).

CONCLUSION: In monitoring patients on chronic methadone therapy, both QT interval and TDR should be used as markers of increased risk for Torsades. Despite the absence of clinical evidence of Torsades in our patients, there was a trend towards more prolongation of both QTc and TDR in patients receiving methadone compared with those receiving other opioids.

REFERENCES: (1) Am J Cardiol 2002;89:1316-9 (2) Pharmacotherapy 2003;23:802-5 (3) Am J Cardiol 2003;92:995-7 (4) Anesth Analg 2005;100:71-7

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Table. Patient demographics and ECG findings. Data are expressed as mean $\pm$ SD

	Control (opioid) group (n=32)	Methadone group (n=32)
Age (y)	52.1 $\pm$ 11.8	52 $\pm$ 10.8
Gender (M/F)	11/21	14/18
Daily dose (mg)	189 $\pm$ 126.1 [†]	63.6 $\pm$ 55.4
QTc (msec)	401.9 $\pm$ 25.5	421.5 $\pm$ 26.1*
Tp-e II (msec)	69 $\pm$ 13.5	75 $\pm$ 17.6
Tp-e V5 (msec)	71.8 $\pm$ 13.3	82 $\pm$ 21.9*
Concomitant Medications		
Anticonvulsants	15.6%	12.5%
Antidepressants	28.1%	34.4%

[†] Daily dose of opioids after conversion to equivalent dose of PO morphine

* $P < 0.05$