**IMPACT OF METHANOL INTOXICATION ON THE HUMAN ELECTROCARDIOGRAM**

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Background: Methanol is a common commercial compound that can lead to significant morbidity and mortality with high levels of exposure. The purpose of this study was to describe electrocardiographic changes associated with methanol intoxication.

Methods: A retrospective chart review was conducted with data from Kingston General Hospital collected between 2006 and 2011. Patient data, including demographics, medications, and laboratory data were recorded. Twelve-lead electrocardiograms (ECGs) were obtained and changes were noted in relation to timing and extent of methanol intoxication. Results: Nine patients with a mean age of 45 years were analyzed. All patients ingested methanol orally and presented to hospital between < 1 to 25 hours after ingestion. The mean plasma methanol concentration on admission was 49.8 mmol/L. The mean pH, anion gap and osmolar gap on admission were 7.20, 18.1 and 48.6 respectively. At admission, ECG changes included sinus tachycardia (44%), PR prolongation (11%), QTc prolongation (22%) and non-specific ST-T changes (66%). One patient developed a type I Brugada ECG pattern, which could be explained by simultaneously receiving a propofol infusion. A lower pH and higher plasma methanol concentration were associated with multiple ECG changes. During their course in hospital, 7 patients required dialysis, 3 required mechanical ventilation, 3 developed visual impairment, and 1 died. All ECG changes normalized during the in-hospital period.

Conclusions: Methanol intoxication can lead to several ECG changes with sinus tachycardia and non-specific ST-T changes being the most common. The number of changes correlates with the severity of the acidosis and plasma methanol concentration.