**BRUGADA PATTERN ELECTROCARDIOGRAPHIC CHANGES IN A PATIENT WITH LITHIUM TOXICITY AND FEVER**

**N. Mehta**, A. Kanthala, M. Schinlever
Rochester Regional Health, Unity Hospital, Rochester, NY, USA

*Introduction*: Lithium toxicity (levels > 1.2mmol/L) can cause electrocardiographic (ECG) changes by affecting sodium channels on cardiac myocytes. We present a case of Lithium toxicity with subsequent aspiration pneumonitis, found to have Brugada pattern changes on ECG.

*Case Summary*: A 54 year old female presented with confusion, insomnia, agitation, and restlessness since 24 hours. Her medical history was significant for bipolar disorder and depression, and home medications included Lithium, Amitriptyline, Quetiapine, and Zolpidem. She reported noncompliance with medications and blood work on admission showed an elevated lithium level (3.0 mmol/L). Shortly after presentation, she vomited, became febrile (39.2C) and severely hypoxic secondary to aspiration pneumonitis.

We obtained an ECG that showed normal sinus rhythm (NSR) with prolonged QTc of 509 msec. Repeat ECG 12 hours later showed change in rhythm to junctional escape at 57/min with premature bigeminy complexes and a classical Brugada pattern - J point elevation with coved ST segment and TWI in V1 and V2 (*Image*). She was treated for lithium toxicity with fluid resuscitation and symptomatically managed for her aspiration pneumonitis. The next day her lithium levels normalized (1.2 mmol/L) and so did her ECG changes. On day 3 she was discharged to primary care follow up.

*Discussion*: Lithium toxicity has been associated with T wave flattening, bradycardia, and QTc prolongation, but not with the Brugada pattern and junctional escape rhythm as seen in our patient. The presence of moderate grade fever complicates the picture, as pyrogens are known for bizarre ECG changes such as ST segment elevations and rarely even Brugada like patterns. First glance abnormal rhythm and ST segment changes draw providers towards common disease entities like myocardial infarction and fatal arrhythmias. Being familiar with transient ECG changes in the setting of medication toxicity and pyrogens may help avoid premature conclusions.

