

## ECG changes in mothers during transplacental treatment of fetal supraventricular tachycardia

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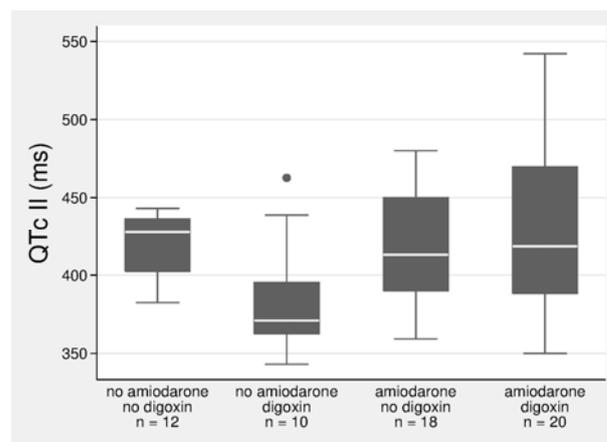
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**Introduction:** Transplacental treatment of fetal tachyarrhythmias was first introduced about 35 years ago. Due to its specific nature, applying this kind of treatment requires extended assessment of mother's medical history and regular monitoring. Fetal heart rate, mother's ECG, blood pressure and drug levels must be monitored

**Methods:** We have conducted a retrospective analysis of treatment related to 19 women who were admitted between January 2013 – December 2014. All had negative cardiac history. We studied 60 ECGs (before and during the treatment) with exam frequency related to one subject ranging between 1 and 7. Time span of observation ranged from 1 day up to 100 days. Among 19 investigated subjects 6 were treated with digoxin, 5 with amiodarone and 8 with both drugs. 2 patients required additional third-line propafenone administration.

In mothers' ECG we checked: 1) ST-segment changes (including "sagging" ST-segment); 2) T-wave changes; 3) QTc; 4) PQ interval; 5) heart rate. We have also employed multivariate linear regression explaining QTc measured in II lead with 1) ST segment change, 2) treatment group in the first specification (n = 60) and additionally by 3) cumulative dose of amiodarone and digoxin in second specification (n=54). Obtained estimates were corrected for ECG clusters over subjects.

**Results:** Among examined ECGs patients ever treated with digoxin, 28 (72%) were characterised by ST-segment changes including 23(59%) "sagging" ST-segment, 9(23%)T-wave change and 3 (8%) featured first-degree atrioventricular block. None of them revealed bradycardia. In the multivariate regressions QTc is marginally negatively related to digoxin treatment (I specification p-value=0.15, II specification p-value=0.10). Amiodarone treatment seems to prolong QTc (I specification p-value =



0.02, II specification p-value = 0.019) with maximal QTc of 542ms. Reported summary statistics are supported by graphical illustration of QTc over treatment groups.

**Conclusions:** Digoxin induces multiple ST-segment changes, rarely first-degree atrioventricular block. Amiodarone impacts positively maternal QTc. Treatment consisting in balanced combination of amiodarone and digoxin seems to exposure to various side effects. In spite of ECG changes applied treatment had not increased maternal risk, what is important information while transplacental therapy is necessary.