

### **Sotalol in Foetal Atrial Tachyarrhythmias. A Retrospective Analysis.**

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#### **Objective:**

Investigating the efficacy and side-effects of Sotalol as a first-line treatment in fetuses with atrial tachyarrhythmias.

#### **Methods:**

From 2004 to 2010 thirty fetuses with atrial tachycardia - AV-node re-entry tachycardia (SVT) and atrial flutter (AF) - were retrospectively evaluated. The heart rate, presence of hydrops, antiarrhythmic therapy, success rate and time to conversion to sinus rhythm (SR), relapse, side effects and maternal QTc interval and postnatal outcome were analysed.

#### **Results:**

In 20 of the 30 fetuses SVT was present (200-300 bpm). In 10 fetuses AF was present with atrial rates of 300 to 470 bpm and a mean ventricular rate of 205 bpm.

Nonhydropic fetuses (n = 22) received Sotalol as initial therapy. Of the eight hydropic fetuses, six received Sotalol and two Flecainide as initial treatment. In three cases Digoxin and in two Flecainide was added.

28 of the 30 fetuses converted antenatally to SR with a mean duration to conversion of seven days. Relapse occurred in three, but was solved. In two nonhydropic fetuses with AF, treated with Sotalol and Digoxin, only rate control was achieved. There were no deaths.

Minor maternal adverse effects were encountered. Two mothers had a QTc interval of > 470 ms (487 and 497 ms); Sotalol was continued.

After birth, in all fetuses but two SR was confirmed. Antiarrhythmic therapy was discontinued.

Two had heart rate controlled AF. However, during the newborn period, rhythm disturbances were seen in 10 of the 30 infants.

In one hydropic foetus, presenting at 36+5 weeks with SVT (280 bpm) and born with SR at 37+1 weeks, an approximately seven weeks old cerebral infarction was seen on MRI. All others showed normal neurological development.

#### **Conclusion:**

Sotalol and the combination of sotalol with flecainide were very successful in foetal atrial tachyarrhythmias. In the SVT-group conversion rates reached 100%. The conversion rate in the AF-group was 80 %, with rate control in the remaining 20%. Sotalol should be considered as a drug of first choice in the treatment of foetal SVT and AF. Flecainide should be considered as a second-line drug in cases of therapy resistant atrial tachyarrhythmias.