Determining the best treatment for fetal SVT and Atrial Flutter (AFI): a comparison of two common drug treatment protocols.

Sridharan S., Sullivan I. (1), Tomek V. (2), Wolfenden J. (1), Škovránek J. (2), Yates R. (1), Marek J. (1,2)
Great Ormond Street Hospital, London, UK (1);
University Hospital Motol, Prague, Czech Republic (2)

Background: The best treatment for sustained fetal SVT with 1:1 AV relationship or sustained fetal AFI is not known.

Methods: 155 consecutive fetuses with supraventricular tachyarrhythmia presented 2000-2012. 127 had SVT with 1:1 conduction and 28 had AFI. 86/127 with SVT were treated: first-line maternal intravenous digoxin (n = 52, centre 2), or maternal oral flecainide (n = 34, centre 1). 25/28 of those AFI received drug treatment: digoxin ± sotalol / other drug (n = 16, centre 2), or digoxin ± flecainide (n = 9, centre 1). Treatment success was defined as conversion to sinus rhythm, or >15% rate reduction.

Results:

SVT subgroup analysis
Short ventriculo-atrial (VA) interval occurred in 69 and long VA in 17. Hydrops was present in 30/86 (35%). Digoxin was successful in 23/28 (82%) and flecainide in 26/27 (96%, p 0.19) of non-hydropic fetuses, compared to 8/21 (38%) and 6/7 (86%, p 0.07) with hydrops.
For short VA SVT, conversion to sinus rhythm and rate control was 31/44 (70%) and 0/44 for digoxin, and 23/25 (92%) and 1/25 (cumulative 96%, p 0.01) for flecainide.
For long VA SVT, conversion to sinus rhythm and rate control was 4/8 (50%) and 0/8 for digoxin, and 5/9 (55%) and 2/9 (cumulative 78%, p 0.3) for flecainide.
IUD or NND occurred in 9/21 hydropic fetuses treated with digoxin compared to 0/9 (p 0.03) treated with flecainide.

AFI subgroup analysis
In non-hydropic fetuses, sinus rhythm occurred with digoxin monotherapy in 7/17 (41%), with digoxin + additional agent in a further 2/17 (cumulative 53%). In hydropic fetuses, sinus rhythm occurred with digoxin monotherapy in 3/8 (38%) and with digoxin + additional agent in a further 4/8 (cumulative 88%). Hydrops was present in 11% of fetuses with sustained AFI compared to 44% of those converting to sinus rhythm (p 0.18). IUD did not occur (0/8 hydropic fetuses, 95% CI 0-0.37).

Conclusions: flecainide was more effective than digoxin in short VA SVT, especially when hydrops was present. No adverse fetal outcomes were attributed to flecainide.
For those in AFI, surprisingly, hydrops did not reduce the likelihood of conversion to sinus rhythm.