TRANSPLACENTAL MANAGEMENT OF FETAL SVT

Broom, E.[1], Thomas, J.[1], Gooi, A[2], Gardener, G[1], Kumar, S.[1,3] Peterson, S.[1]

1. Mater Mothers Hospital
2. Qld Paediatric Cardiac Service
3. University of Queensland

Abstract

Fetal supraventricular tachycardia (SVT) is a relatively uncommon but potentially severe cardiac rhythm anomaly. When encountered antenatally, sustained SVT can result in complications relating to heart failure including hydrops and fetal death, if untreated. Although small case series exist, robust criteria to inform choice of transplacental treatment regime is currently lacking. We aimed to document our tertiary centre experience and protocols.

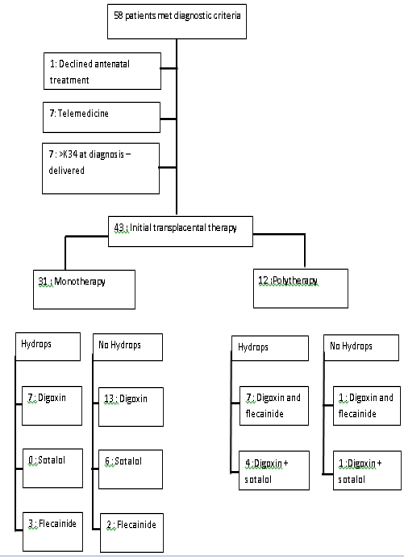
Methods

Retrospective chart review of 54 cases of fetal SVT treated through the Qld Paediatric Cardiac Service (MMH + RBWH) between 2005 – 2018.

Primary outcomes: choice of anti-arrhythmic agent and time to sustained rate reversion.

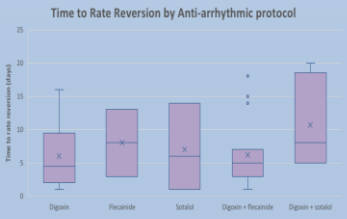
Secondary outcomes : gestation at delivery, indication for delivery and incidence of maternal side effects

Figure 1: Treatment criteria



Results

- At diagnosis: average gestation 28weeks, 42.8% of the cohort had hydrops
- polytherapy with flecainide and digoxin was both efficacious and well tolerated: rate reversion in 85% as first line, and 100% as second line therapy, at an average of 6.11 days.
- 62% were delivered by caesarean section (48% with primary indication of treated SVT)
- 2 IUFD in cohort. 5/43 delivered early due to therapy failure/ complications



Conclusions

- Polytherapy with flecainide and digoxin is both an efficacious and well tolerated regime
- Therapy commencement should include maternal ECG, echo and adult cardiology review as an inpatient
- Rate of serious maternal side effects is low with utilised doses of anti-arrhythmics in this setting (9%)
- Women can be offered the option of vaginal delivery – with caution that intrapartum rate-reversion would indicate caesarean section

Table 2: Outcomes of Anti-arrhythmic agents in fetal management of SVT

AGENT	Usage	Overall rate of successful reversion	Average time to reversion in days (range)	Success as second line (n)	Latency to therapy change (days)	Reversion with second line agent
Digoxin	20	7 / 20 (35%)	6.57 (1-16)	0	8.9	12/13 (92.3%)
Flecainide	5	2 / 5 (40%)	2.5 (2-3)	0	4.5	2/3 (66.7%)
Sotalol	6	3 / 6 (50%)	7 (1-14)	0	8.5	2/2 (100%)
Digoxin + flecainide	20	17/20 (85%)	6.11 (1-18)	13/13 (100%)	8.3	1/2 (50%)
Digoxin + sotalol	8	5/8 (62.5%)	11.8 (5-20)	4/6 (66.7%)	8	1/3 (33.3%)
Amiodarone	2	0/2 (0%)	0	0/2 (0%)	0	0

References

References list available on request via corresponding author : elisha.broom@mater.org.au