

### French monocentric experience with antenatal diagnosis of Hypoplastic Left Heart Syndrome

Joly H.(1), Blondel de Joigny C.(1), Veyrier M.(1), Pangaud N.(1), Bertail-Galoin C.(1), Massardier J.(2), Walton C.(1), Di Filippo S.(1)

(1) Cardiovascular Hospital Louis Pradel, Université Claude Bernard, Hospices Civils de Lyon, Lyon, France

(2) Obstetrics and Gynecology, Hopital Femme Mère Enfant, Lyon, France

The objective of this study was to assess the outcomes of fetus and decision making after prenatal diagnosis of hypoplastic left heart syndrome (HLHS).

**Material and Methods:** This study is a single-center retrospective analysis of all fetus diagnosed with HLHS syndrome from 2010 to 2016. Antenatal parameters included: mother age and gestational age of fetus at diagnosis, genetic testing, and prenatal outcomes. Postnatal parameters included: gestational age, birth weight, apgar score, echocardiographic measurements, and decision-making.

**Results:** Overall 70 foetus were included in the study, diagnosed at  $26.4 \pm 5.2$  weeks of gestation, with: typical HLHS (54), unbalanced DORV (2) or AVSD (1), borderline LV (4), severe aortic coarctation and LV hypoplasia (3), double inlet ventricle (3) and complex CHD (3). Four cases had a chromosome anomaly. Thirty-seven terminations of pregnancy (53%) at  $25.2 \pm 3.1$ WG and 25 (36%) live births occurred; the remaining cases included: sudden in utero death (1), ongoing gestation (1), and lost of FU (6= 9%). Gestational age at birth was  $38.8 \pm 1.9$ wg (34 to 42wg), birth weight was  $3180 \pm 600$ g (1900 to 4300g); apgar score was  $\leq 3$  in 16% and  $> 7$  in 80% of the cases. Postnatal echocardiographic analysis was concordant with prenatal assessment: HLHS (15), borderline LV (7), DORV (1), DIV (1). One patient died early after birth from uncontrolled cardiogenic shock and hypoxemia. Among the 24 remaining patients, 8 were un-operated and died (parents decision for compassionate care), and 16 underwent first-stage surgery (i.e. 23% of overall 70 fetus) at the age of  $10.8 \pm 6.2$ days (5 to 25d) from whom 7 had second-stage surgery at the age of  $4.1 \pm 2.6$  months (1 to 7mos).

**Conclusion:** Despite experience and improvement of surgical techniques in HLHS, decision making in a French tertiary-care center Pediatric cardiology department still prefer TOB or compassionate care to active surgical management.