5601: Evaluation of Non-immune hydrops fetalis (NIHF) diagnosed in the first trimester and postnatal follow up of the continuing pregnancies

Muniraj V, Jain A, Acharya V, Shettikere A, Radhakrishnan P, Bangalore Fetal Medicine Centre, India

BANGALORE FETAL MEDICINE CENTRE

Introduction: Hydrops fetalis refers to the presence of at least two abnormal fluid collections in the fetus, including fluid in serous cavities (eg, ascites, pleural effusions, pericardial effusions) and generalized skin edema. Nonimmune hydrops fetalis (NIHF) comprises the subgroup of cases not caused by red blood cell alloimmunization (eg, RhD, Kell).

Objectives:

- To evaluate the association of NIHF with other structural and chromosomal abnormalities in the first trimester and assess the progression

Methodology:

- Retrospective study of prospectively collected data from a single tertiary care centre in South India
- The study period was from January 2005 till December 2022
- Following diagnosis of NIHF, a detailed evaluation for associated anomalies was done
- All scans performed between CRL of 45-84 mm by FMF certified operators and recorded on Astraia software
- 104/14496 (0.71%) fetuses were included in the study
- Invasive test was offered to all. Outcome was available for all pregnancies

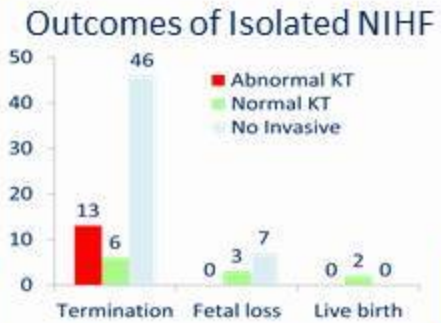
Fig 1: Hydrops fetalis in first trimester

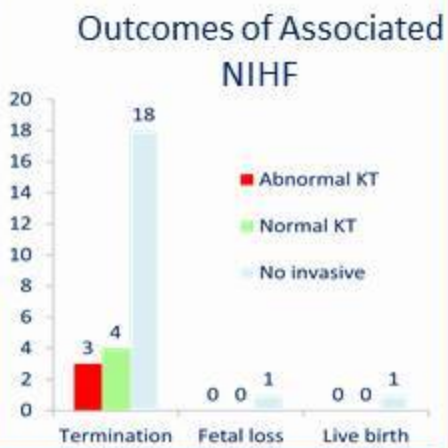
Results:

Overview of NIHF		
	Isolated NIHF	Associated with other structural defects
104/14,496 fetuses	77/104 (74%)	27/104 (26%)
Invasive testing	24/77 (31.8%)	7/27 (26%)
Aneuploidies	13/24 (54%)	3/7 (43%)
Trisomy 21	6/13 (46.2%)	0/3 (0%)
Trisomy 18	1/13 (7.6%)	2/3 (66.7%)
45 XO	6/13 (46.2%)	1/3 (33.3%)

Associations		
Cardiac 12/27 (44.4%)	Extra-cardiac 12/27 (44.4%)	Both 3/27 (11.2%)
HLHS 9/12 (75%)	Exomphalos 6/12 (50%)	Rachischisis + Exom + AVSD
TaT- 2/12 (16.67%)	Holoprocencephaly 2/12 (16.67%)	Exom + AVSD
AVSD 1/12 (8.3%)	Others 4/12 (33.33%)	Exom + CHD (Chamber discrepancy)

- The cardiovascular system was the most frequently involved system
- HLHS - most common - 9/12 - (75%)
- Exomphalos was the most common extra-cardiac association - 6/12 - (50%)





-2 fetuses in the isolated NIHF group who had normal karyotype and continued the pregnancy, both were term live births with good long term postnatal outcome

-Whereas 1 fetus in the associated NIHF group continued the pregnancy was a live birth with neurodevelopmental delay

Conclusions:

- NIHF is easily identified in the first trimester
- High association with aneuploidies, especially Turner Syndrome, Trisomy 21 and fetal loss
- Detailed evaluation of all the other systems, in particular the fetal cardia
- Offer invasive testing to all.
- Newer genetic tests like the chromosomal microarray may be beneficial
- Identifying the cause is extremely important in counselling the parents

References:1. Society for Maternal-Fetal Medicine(SMFM).Norton ME, Chauhan SP, Dashe JS.Society for maternal-fetal medicine(SMFM) clinical guidence #7: nonimmune hydrops fetalis.Am J Obstet Gynecol.2015 Feb;212(2)

2. Steurer MA, et al. Epidemiology of live born infants with nonimmune hydrops fetalis-insights from a population based dataset. J Pedistr.2017

Correspondence:
drprathima@bangalorefetalmedicine.com