INTRODUCTION

'Hydrops Fetalis describes a fetus or neonate with a pathological increase in total and interstitial body water, manifested as generalized subcutaneous edema, accompanied by serous fluid collections within one or more of the pericardial, pleural, or peritoneal spaces.

Diagnosis of fetal hydrops identifies a clinical entity which has a wide spectrum of underlying etiologies and associations.

Although hydrops Fetalis indicates fetal compromise in utero, fetal outcome of serious morbidity or mortality will depend upon the actual cause of the fetal hydrops. The antenatal detection of fetal hydrops requires an expeditious and diligent search for the underlying cause in order to direct appropriate pregnancy counseling and management.

CLASSIFICATION

There are two major categories of hydrops Fetalis:

* Immune hydrops (IH) - due to maternal hemolytic antibodies
* Non immune hydrops (NIH) - due to all other etiologies

IN PRESENT CHEPTER ONLY NONIMMUNE HYDROPS IS DISCUSSEN IN BRIEF.

Etiology

FETAL : FOCAL ABNORMALITY
Cardiac causes 20-25%
Intrathoracic lesions or masses - 8-10%
Gastrointestinal 1%
Hepatic 1 %
Renal 2-3 %
Vascular / Tumours 2-4 %
FETAL : GENERALISED ABNORMALITY
Infectious causes 1-8 %
Skeletal dysplasia 4%
Metabolic disorders 1%
Chromosomal disorders 15-20%
Fetal anemia-10-27%
Syndromes 8-9%
Twinning 4-8%
PLACENTAL/UMBILICAL 2-6%
MATERNAL <1%
Maternal Indomethacin (Indomethacin) use
Lupus erythematosus
Hyperthyroidism
Hypothyroidism

Following maternal complications are increased in NIH to mother.

1. Polyhydramnios
2. Pregnancy-induced hypertension
3. Anemia
4. Preterm labor
5. Postpartum hemorrhage
6. Large baby and associated complications
7. Gestational diabetes
8. Placental retention
9. Mirror syndrome

DIAGNOSTIC APPROACH TO THE FETUS WITH HYDROPS:

Once hydrops is detected, both parents should ideally be counseled by a multidisciplinary team regarding:

1. Nature of the finding and its possible implications,
2. Need for extensive testing which can carry potential risks from invasive procedures to both mother and fetus,
3. Diagnosis and prognosis once results from investigations are available
4. Possible treatment options including termination of pregnancy, expectant management, or fetal therapy
5. Timing, mode, and place of delivery.

Maternal History

Age,
Consanguinity
Hereditary or metabolic diseases,
Anemia
Recent infection or medication use

Maternal investigation

CBC,
Blood group with Rh.
Indirect coombs test, Thyroid function test
VDRL, TORCH, Parvovirus B19 IgM,
Kleihauer - Betke test
Hemoglobin electrophoresis
Autoimmune screen in form of ANA, APA, ACA antibodies
Maternal triple/Quadra/penta screen
Metabolic enzyme, G6PD, Pyruvate kinase enzyme study (optional)

Ultrasonography

Detailed anatomical evaluation of fetus
Evaluate extend of the fetal edema
Multiple gestation evaluation
Doppler flow study
Fetal echocardiography including fetal cardiac arrhythmia study

Fetal tissue sampling

Blood/ Amniotic fluid /tissue sample/CVS

Fetal investigation

Fetal Karyotyping,
CBC with Reticulocytes count,
Blood group with Rh,
Hemoglobin electrophoresis,
Parvovirus B19 and TORCH IgM and IgG,
Metabolic testing (Tay-sachs, Gaucher, Gangliosidosis etc)
Fluid analysis (plural/Ascitic/urine - for Protein content, cell count and cytology)

Factors reported to associated be with better survival are

1. Absence of underlying lethal congenital malformations or chromosomal anomaly
2. Normal plasma proteins
3. Absence of fetal infection