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FREE PAPERS - USG (US)

Effect of Abnormal Umbilical Artery (UA) Flow in Small for Gestation (SGA) Babies on Gut Function and Its Correlation with Postnatal Superior Mesenteric Artery (SMA) Flow

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Background: In growth restricted fetuses a redistribution of blood favoring cerebral circulation with a corresponding decrease in gut circulation is known. SGA babies with abnormal UA flow may be more prone to develop intestinal problems like feed intolerance and Necrotising enterocolitis (NEC) due to persistent hemodynamic disturbances in gut blood flow. Correlation between SMA blood flow and feed intolerance in babies with abnormal UA Doppler flow have not been studied adequately in our country.
Study design : Prospective cohort study
Setting : Tertiary care neonatal unit
Study period : January 2004 – May 2005
Aim: To study the association of absent or reversed and diastolic flow velocities (AREDFV) with 1)- feed intolerance and NEC 2)- postnatal SMA flow and neonatal gut function.
Subjects & Methods : Three groups of babies were included in this study :
i. Twenty three babies in the study group (SGA & AREDFV),
ii. Twenty babies in the 1st control group (SGA & normal umbilical flow),
iii. Nineteen babies in the 2nd control group (AGA with normal umbilical flow).
Baseline SMA flow was done when babies were clinically ready for feed and repeated every 15 mins for 60 min after a test feed of 0.5 ml.
Outcome measures : 1) Incidence of feed intolerance and NEC
2) Various incides of baseline and post feed SMA flow velocities
Results: Feed intolerance was seen in 69.5% of babies in study group (p=<0.001) as compared to 20% and 17.5% in the 1st and 2nd control group. NEC was seen in 17.5% babies in the study group (p=0.02). Parents without feed intolerance had higher time average mean velocity (TAMV) and peak systolic velocity (PSV) of SMA at 60 min post feed than those with no feed intolerance (p=0.013). TAMV at 60 min post feed was significantly lower in study group than 2nd control group.
Conclusion : SGA babies with AREDFV had higher incidence of feed intolerance and NEC. SMA flow velocities at 60 min post feed may help in differentiating which babies are more prone to develop feed intolerance.

Pre-Natal Diagnosis and Pregnancy Outcome in Fetal Renal Anomalies: A Case Series

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Aim: To determine the prenatal diagnosis, prognosis and pregnancy outcome in cases of sonographically detected fetal renal anomalies.
Material and Methods: In an audit conducted in the Department of Obstetrics and Gynaecology at the All India Institute of Medical Sciences, New Delhi; we have analysed 35 cases of fetal renal anomalies

detected over three years from 2003-2005. The details of all mothers who were detected to have a fetus with renal anomaly on ultrasound were analysed. Their obstetric history, the nature of anomaly, its prenatal diagnosis, diagnostic procedures on the fetus, the obstetric management, mode of delivery and follow up of the newborn were noted and studied.

Results: The age group of the mothers who gave birth to these babies ranged from 19 to 30 years. There were 5 cases of PUJ obstruction, 7 of multicystic dysplastic kidney, 11 cases of hydronephrosis, 4 of polycystic kidney disease, 5 with posterior urethral valve and 2 with renal agenesis. 22 patients were offered better prognosis and continued pregnancy. Of these three required postnatal surgery and there was no perinatal mortality. The others are on followup. 2 babies had associated anomalies namely : omphalocele and cystoadenomatoid malformation of the lungs. 13 patients were offered termination. Indications for termination included bilateral renal agenesis(3), multicystic dysplastic kidney(5), bilateral polycystic kidney disease(2) and posterior urethral valve(3) with severe early onset.

Conclusion: The prognosis of prenatally diagnosed fetal renal anomalies depends on the specific anomaly suspected. Lethal anomalies include bilateral renal agenesis, bilateral multicystic dysplastic kidney, renal anomaly with another anomaly incompatible with life and bilateral polycystic kidneys. Abnormal karyotype, severe early onset oligamnios, other associated malformations and bilateral involvement are unfavorable determinants of the prognosis in individual cases.

Early Pregnancy –USG-at Rural Set UP–Helps in Avoiding Malformed Fetus

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There are several advantages in first trimester USG

Aim : To evaluate the feasibility of first trimester USG in rural set up

To diagnose for structural anomalies

To diagnose Normal or Abnormal pregnancy

To determine the efficiency of first trimester USG for chromosomal abnormalities

Method; An observational Prospective Follow up study performed at G.H Poonammallee,Thiruvallur district,from

January 05 for 50 patients with TAS 3Mhz after clinical investigations to determine the normal or abnormal pregnancy with first trimester bleeding 12-14weeks and or with pain abdomen and also when there LMP not known

Results:USG showed 4 cases 8% Missed abortion,2 cases4% Anembryonic fetus ,2 cases4% gross oligohydrominios,,one case 2%vesicular mole,2cases 4% unruptured Ectopic ,4cases 8%threatened abortion3with cardiac activity one without ,one case 2% of cystic hygroma,one case 2% of PVU ,one case 2% showed increased NT at 11 weeks but subsequent scan showed normal anatomy.management offered for threatened abortion without cardiac activity ,other abnormal pregnancy,structural anomalies were terminated .Unruptured ectopic refered to higher center.35 cases delivered Normal baby.

Conclusion: By doing First trimester USG ,we can avoid malformed fetus birth by differentiating Normal and abnormal fetus and by giving appropriate management results in delivery of Structurally Normal Fetus even in rural set up

Prenatal Diagnosis of Congenital Diaphragmatic Hernia - A Case Series

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Congenital diaphragmatic hernia is a rare condition affecting 1 in 4000 pregnancies when the diaphragm fails to develop in the fetus. In most cases the defect is left and postero-lateral enabling abdominal organs to enter the thoracic cavity. Diagnosis is often missed on targeted anomaly scans in mid pregnancy and such cases manifest on follow up scans diagnosed later in pregnancy when to pose a management dilemma. Survival depends upon the degree of fetal liver hernia, presence or absence of other anomalies, lung to head ratio, besides early prenatal diagnosis. Early prenatal diagnosis allows options of termination or planned birth of the affected baby at a tertiary care center.
We present a series of six cases of CDH diagnosed antenataly between 20-34 weeks of gestation.over a period of four years(2002 -2005). Only one case was diagnosed at 20 wks while the other five were diagnosed at 32 to 36 wks .Three of the six patients were further evaluated and confirmed by an ultrafast fetal MRI. Besides confirmation , MRI helps in accurate assessment of fetal lung volume and pulmonary hypoplasia .Termination was opted in one when diagnosis was made at 20 weeks. In remaining five cases extent of herniation enabled pediatric surgeon and pediatricians to outline subsequent management plans. All cases were confirmed postnataly or at autopsy. There were no other associated malformations. Only two of the five cases had a successful postnatal surgical outcome. Early prentatal diagnosis is an important determinant in prognostication of congenital diaphragmatic hernia. Also with Fetal MRI a clearer image emerges which might help in planning postnatal and even antenatal therapy and management.

First Trimester Uterine Artery Doppler Velocimetry and Pregnancy Outcome

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Objectives: To determine mean uterine artery Doppler indices i.e. Pulsatility Index (PI), Resistance Index (RI) and Systolic / Diastolic Ratio (S/D Ratio) in 1st trimester in uncomplicated pregnancies and to correlate these with abnormal pregnancy outcome.
Material and methods: Bilateral uterine artery Doppler was carried out by transvaginal sonography at 6-13 weeks of gestation in 100 women with singleton pregnancy at recruitment and thereafter every two weeks till 13 weeks. Presence of diastolic notch was noted. Patients were followed up till delivery and outcome was recorded as normal (group I) or abnormal (group II). Mean values of uterine artery Doppler indices at 6-8, 8-10 and 10-13 weeks were compared in both the groups and correlated with abnormal outcome.
Results: Thirteen women were excluded because of incomplete data. Twenty-four (27.58%) women with abnormal outcome included miscarriage (1.14%), hypertensive disorder of pregnancy (17.24%), intrauterine growth restriction (12.64%), preterm labor (6.89%), abruptio placentae (1.14%), and fetal death (1.14%). Mean uterine artery indices decreased with advancing gestation (6-8, 8-10, 10-13 weeks) in group I. PI (1.872, 1.459, 1.336), RI (0.785, 0.719, 0.651), S/D (3.990, 3.335, 3.054) and group II PI (1.746, 1.691, 1.266), RI (0.823, 0.711, 0.661), S/D (4.672, 3.494, 3.375). Mean values of PI, RI and S/D were more in group II than group I at all gestations, although the difference was not statistically significant. The diastolic notch was significantly more in group II compared to group I (p=0.000). The sensitivity and specificity of Diastolic notch in predicting abnormal pregnancy outcome was 72.0% and 75.8% respectively, with positive predictive value of 52.9% and negative predictive value of 87.7%.
Conclusion: First trimester uterine artery Doppler indices decrease with advancing gestation and were more in abnormal pregnancy indicating relative ischemia. Diastolic notch was significant in predicting abnormal outcome.

Foetal Anomaly Scan in Low Risk Population

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Introduction: The incidence of clinically significant anomalies varies from 2-7% live births (Bannerman,1981). 80% of the anomalies occur in low risk population. USG detects 90-95% of these anomalies. Their early detection enables appropriate and timely intervention and thus can decrease the tremendous psychological and financial burden on the family as well as on the society.
Aim: To find the incidence of foetal anomalies, types and their detection rates in different trimesters.
Materials and Methods: This is a prospective study conducted at two referral diagnostic centers in Guwahati during the period from September 2003 to August 2005.
3428 low risk women were subjected to Foetal Anomaly Scan irrespective of the gestational age and the reffered doctors request (Exclusion criteria-age>=35yrs, IDDM, positive family history, history of exposure to known teratogens)
Foetal outcome was followed up.
Results: 32(0.94%) anomalies were detected;27 in second trimester and 5 in the third trimester. Anomalies included Multiple Congenital Anomalies 3(9.4%),Neural Tube Defects 4(12.5%),Skeletal 8(25%),G.I 2(6.2%),Renal 3(9.4%),Cardiac 2(6.2%),Facial 5(15.6%),Neck 1(3.1%),Miscellaneous 4(12.5%).
Our detection rate was 91%; 3 anomalies were missed; they were screened for the first time in third trimester and had gross oligohydramnios.
315(9.2%) patients were lost to follow up.
Conclusion: No pregnancy is free from the risk of Foetal Congenital Anomalies. While second trimester USG is indispensable for anomaly detection, a third trimester scan fails to show comparable results.

Nuchal Translucency Screening: The Experience in Pakistan

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Objectives: The objective of this study was to assess the impact of Nuchal translucency screening for Down's syndrome.
Methods: Between the study period from July 2001 to September 2005 293 women underwent Nuchal translucency screening for Down' syndrome. We reviewed all records to determine the outcome of the pregnancy. All we looked at the uptake of invasive testing in this group. The variables were entered in a database file and analyzed by SPSS.
Results: 293 women undergoing nuchal translucency screening served as the study population. The reasons for referral being advanced maternal age, previous history of congenital or chromosomal abnormality. The mean age of the subjects was 31.3 with SD 5.3, (ranging from 18-46 years). Nuchal translucency screening was performed at a mean gestational age of 12.6 weeks SD 0.65.
In nine cases that were referred for the NT screening the gestation was well advanced for the screening and in one case it was possible to take the measurement. In 15 women NT measurement was greater than 2.5mm. Seventeen women were found to be screen positive using the cut off of 1 in 250. Meckel Gruber syndrome was diagnosed in one case. Two cases of Trisomy 21 and one of Trisomy 18 was found in the high risk group. The outcome of the rest of the pregnancies was normal except that one set of twins with increased nuchal translucency underwent miscarriage.
CONCLUSION: Nuchal Translucency screening is an effective method of screening for chromosomal abnormalities. Therefore this program needs to be established.

Uptake of Invasive Prenatal Diagnostic Tests in Women with Soft Markers for Aneuploidy on Ultrasound

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Prenatal ultrasonography is a part of routine obstetric care and use of soft ultrasound markers provides a useful option for screening for aneuploidy in low risk population. Identification of soft marker for aneuploidy calls for detailed counseling regarding risk of aneuploidy and invasive test for chromosomal analysis. The risk of aneuploidy is different for each marker and for most of the markers, it is usually small. The invasive test for low risk aneuploidy is perceived differently by different people.
We evaluated the uptake of invasive test by women with prenatal detection of ultrasound soft marker for aneuploidy. Out of 679 ultrasounds, 42 women were detected to have a soft marker. The gestation age at detection of marker was 16-20 weeks in 41 % and 20-24 weeks in 36 % of cases. After counseling about the risk of aneuploidy and the risk of abortion following an invasive procedure, 17(40.5 %) of women opted for amniocentesis. Except one case of trisomy 21 in a fetus with short femur and humerus, all others had normal karyotype. The uptake of the test was comparable between primigravida (36%), women with bad obstetric history (45%) and women with at least one normal live issue (37.5 %). There was no statistical difference in the uptake of invasive test based on gestational age as well.
Though the numbers in the present study is small, 40.5% women with ultrasonographic soft marker for aneuploidy opt for invasive prenatal sampling. The uptake of invasive test however does not depend on previous obstetric history and gestational age.