MATERIAL AND METHODS
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The study was conducted on 70 pregnant women which were selected randomly from the antenatal clinic and maternity ward of M.L.B. Medical College, Hospital, Jhansi. This study included ultrasonographic estimation of amniotic fluid volume by amniotic fluid index method.

The amniotic fluid index measurement was correlated with foetal heart rate and pregnancy outcome. The criteria for inclusion of cases in our study were as follows:

1. Singleton pregnancy.
2. Pregnancy with intact membrane with no history of leaking per vaginum.
3. Ultrasonographic measurement of amniotic fluid index in term gravid women i.e. between gestational period of 36 to 42 weeks.
4. Careful foetal heart rate monitoring during labour.

INDICATIONS FOR ANTEPARTUM FETAL SURVEILLANCE

1. Post dates.
2. Intrauterine growth retardation.
3. Hypertension.
4. Decreased foetal movements.
5. Antepartum haemorrhage.
6. Bad obstetrical history.
8. Severe anaemia.
9. Heart disease.
10. Miscellaneous i.e. Rh. negative.

The study was cross section and only a single ultrasonographic examination from each pregnancy was included.

ULTRASOUND EQUIPMENT AND TECHNIQUE

Obstetrical ultrasound at term is done in all subjects with Philips real time scan 3.5 MHz linear transducers (with electronic calipers). Semiquantitative estimation of amniotic fluid volume was done as four quadrant technique described by Phelan et al (1987) known as Amniotic fluid index.

Currently available real time scanner contains the following components:
1. The transducer.
2. A scan convertor and monitor.
3. A control panel.
4. On screen calipers.
5. A mean of taking hard copy.

The transducer serves a dual function as both transmitter and receiver. Sound is transmitted in
approximately 1000 short bursts and the transducer also function as a detector securing the returning echoes. It simultaneously manipulates the controls to optimally display the image.

Method of determination of amniotic fluid index

1. Patient positioned supine with full bladder.

2. Uterus viewed as four quadrant, landmarks for the four quadrants of the maternal abdomen were used to divide the uterine cavity into 4 sections. The umbilicus divides it transversely into upper and lower halves and linear nigra divides into right and left halves.

3. Vertical depth of the largest clear amniotic fluid pocket is measured in centimeter.

4. Ultrasound transducer placed perpendicular to plain of the floor and aligned longitudinally with the patients supine.

5. Sum of four quadrant pocket depths denotes amniotic fluid index.

6. Brief appearance of cord or an extremity was ignored during measurement.

7. Pockets confluent with pockets in adjacent quadrants were avoided.

8. Amniotic fluid index 5 or less than 5 was taken as severe oligohydroamnios (Rutherford et al, 1987).
Diag.: The uterus is divided into four quadrants. The linea Nigra divides the uterus into right and left halves. The umbilicus divides the uterus in upper and lower halves.
Other measurements like biparital diameter head circumference and abdominal circumference, femur length and head circumference/abd. circumference ratio were taken along with placental maturity grading to detect normal, Intrauterine growth retarded or post-mature foetus. Any congenital anomaly excluded for the sake of foetal well being.

Amniotic fluid estimation by ultrasound were compared with clinical recognition and amount of amniotic fluid drained (approximately) at the time of delivery.

**CORRELATION OF AMNIOTIC FLUID VOLUME WITH FOETAL HEART RATE**

Normal foetal heart rate is depicted by a rate of 120-160/min, which is uninfluenced by uterine contractions. Foetal heart rate was observed by stethoscope (in between contractions during labour). Foetal heart rate $\geq 120$ i.e. bradycardia or more than 160/min i.e. tachycardia, irregular foetal heart rate persisting for more than 15 minutes was taken as a criteria for foetal distress.

In each patient amniotic fluid volume and foetal heart rate was correlated with foetal outcome.