SUMMARY AND CONCLUSION

Amniocentesis with determination of the phospholipid profile (L/S ratio and PG levels) remains the most useful and universally acceptable estimate of fetal pulmonary maturity.

Amniocentesis, however, is an invasive procedure with a small but significant fetal and maternal morbidity rate up to 15% in third trimester of pregnancy.

Ultrasonic evluation of fetal lung maturity was done on 90 patients whose gestational ages ranged from 28 to 42 weeks. Seven parameters were studied, namely : BPD, distal femoral and proximal humoral epiphysis, lung/liver ratio, fetal bowel pattern, placental maturity and amniotic fluid fleckers. A scoring system (13 Points) was designed to include the 7 parameters. All the cases were delivered within 24 hours of U/S examination.78 cases had no RDS (G_1) while 12 cases had RDS (G_2).

The mean gestational age and BPD were significantly lower in G_2 than G_1 ($P<0.001$) . Distal femoral epiphysis was significantly larger in G_1 than G_2 ($P<0.001$). Lung/liver ratio showed a significantly higher incidence of hyperdense lung in G_1 than G_2 ($P<0.001$). The incidence of mature fetal bowel was significantly higher in G_1 than G_2 (97% Vs 66%, $P<0.001$).

Grade III placentae showed no RDS. Amniotic fluid was turbid in 81% in G_1, compared to 58% in G2 ($P < 0.05$).

The mean fetal lung maturity score was significantly higher in G_1 than G_2 (9.7 ± 2.3 Vs 3.7 ± 2.2, $P<0.001$). Ultrasonic fetal lung maturity score (≥ 7) showed : 88.5% sensitivity, 91.7% specificity, 55% positive

predictive value, 98% negative predictive value and 88.9% total accuracy in predicting fetal lung maturity. A score of 8 or more is almost conclusive of mature lungs.

Conclusion :

Sonographic evaluation of fetal lung maturity can provide valuable information and act as a rapid, easy, non invasive and accurate test for detection of fetal lung maturity. A score of eight or more is conclusive of lung maturity while a score of seven or more carries only 2% risk of RDS which is acceptable even if compared to results of standard lung maturity tests.

But due to the limited number of cases this score needs further evaluation on a large scale of cases specially abnormal pregnancy.