INTRODUCTION

Several investigators have demonstrated that prolongation of pregnancy beyond term is accompanied by a rise in perinatal morbidity and mortality ***(Ariel et al., 1992; Michael et al., 1995 and Cunningham et al., 1997).***

Oligohydramnios has particular relevance to postterm pregnancies because the volume of amniotic fluid diminishes as gestation advances beyond term, therefore, ultrasonographic evaluation for the presence of oligohydramnios is extensively used for fetal testing in these pregnancies ***(Michael et al., 1995).*** Oligohydramnios in postterm pregnancies is associated with fetal heart rate decelerations and fetal asphyxia. A common belief is that the fetus with oligohydramnios is suffering from uteroplacental insufficiency, requiring it to preferentially shunt blood flow away from non-essential organs such as the kidneys. With less renal blood flow there would be decreased urine output and less amniotic fluid. This same mechanism is also assumed to cause a fetus to show other signs of distress ***(Jodi et al., 1996).***

Numerous studies have shown that amniotic fluid volume assessment is critical in the evaluation of postterm gestation. ***Crowley (1980)*** found that the incidence of meconium stained liquor, fetal acidosis, cesarean section for fetal distress and low Apgar score were increased in postterm pregnancies complicated by decreased amniotic fluid volume.

Phelan (1987) found that adequate amniotic fluid volume in postterm pregnancies is a reliable predictor of fetal well-being and found a statistically increased incidence of cesarean section for fetal distress and passage of meconium in cases of decreased amniotic fluid volume. Amniotic fluid volume has been an effective method in predicting fetal distress in postterm pregnancy and has been significantly more accurate in predicting intrapartum fetal distress than non-stress test ***(Tangsong and Srisomboon, 1993).***

Before the advent of ultrasound technology, amniotic fluid volume was usually estimated using indicator (dye) dilution techniques. These methods require amniocentesis to instill and recover the indicator and therefore have restricted clinical utility ***(Ariel et al., 1992).*** Real-time ultrasound allows non-invasive, semiquantitative amniotic fluid measurements to be conveniently made over a broad range of gestational ages. Ultrasonographic measurements of amniotic fluid volume are frequently expressed as a one dimensional linear distance of the largest pocket of amniotic fluid or a summation of these measurements over four uterine quadrants referred to as the amniotic fluid index ***(Ariel and Michael, 1992 and Porter et al., 1996).***

Amniotic fluid index measurement may be a more appropriate mean than measurement of the single largest pocket or subjective assessment ***(T. Moore, 1990).***

Amniotic fluid index value less than or equal to 5cm represents oligohydramnios. Amniotic fluid index value more than or equal to 20cm constitutes polyhydramnios ***(Brace and Wolf, 1989).*** Several sonographic studies have recently reported a weekly decrease in the amniotic fluid

index beyond term as ***Phelan et al. (1987)*** reported a decline of approximately 3% per week. A decline of 10% per week was reported by ***Brace and Wolf , (1989)*** who also used ultrasound as an indirect measure of amniotic fluid volume. ***T. Moore (1990)*** similarly found a weekly decrease of 12%.

Prominent increases or decreases in amniotic fluid index of postterm patients had no association with adverse fetal outcome irrespective of the rate of change of the amniotic fluid index provided the final value remained more than 5cm. When amniotic fluid index fall below 5cm, there will be a significant association with increased incidence of fetal heart rate abnormalities and the presence of meconium ***(Michael et al., 1995).***