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RESEARCH ARTICLE

PREGNANCY OUTCOME IN OLIGOHYDRAMNIOS

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ABSTRACT

Objectives: (i) To assess whether oligohydramnios is associated with adverse pregnancy outcome and (ii) to compare the pregnancy outcome in this study group with a control group and determine the difference in outcome between the two groups.

Methodology: This prospective study was conducted over a period of 1 year (Jan 2014 to Jan 2015). The study was conducted on 80 pregnant women with gestational age ≥ 34 weeks and they were divided into a study group of 40 patients having oligohydramnios and a control group of 40 patients without oligohydramnios. Amniotic fluid assessment was done by ultrasound. The selected end points which were used to judge the pregnancy outcome in both groups of patient were rate of cesarean section for fetal distress, rate of induced labor, presence of meconium in amniotic fluid, apgar score of baby, rate of still birth and intrauterine growth retardation. The outcome of pregnancy in study group was compared with that of control group.

Results: The ultrasound examination of patients was done and an amniotic fluid index of 5cm or less was taken as the criteria for diagnosis of oligohydramnios. The indications of ultrasound examination were similar for cases and controls. They included suspected IUGR, maternal hypertension and decreased fetal movements. There was a significantly higher rate of induced labor, cesarean section, IUGR babies, still births, low apgar score and meconium-stained amniotic fluid in the study (oligohydramnios) group as compared to control group.

Conclusion: The results of present study indicate that the risk of adverse pregnancy outcome is increased in patients with oligohydramnios. So, its management warrants increased antepartum surveillance for early detection of pregnancy complications and fetal scanning to diagnose malformations or growth restriction.

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INTRODUCTION

A fetus is surrounded inside the uterus by amniotic fluid. The presence of amniotic fluid enables normal development of the fetal respiratory, gastrointestinal, genitourinary and musculo-skeletal system. It enables continued fetal growth in a non-restricted, sterile and thermally controlled environment. The volume of amniotic fluid at each week of gestation is quite variable. The usual amniotic fluid volume increases from 50ml at 12 weeks to 400ml at mid pregnancy and 1000ml at term. (Visvalingam *et al.,* 2012; Ali Ergan *et al.,* 1998) Oligohydramnios affects approximately 3.5-5.5% of all pregnancies. (Lewis Shanker *et al.,* 1991) The amniotic fluid index of ≤5cm is the most popular modality to define this condition. The various conditions which are associated with oligohydramnios are IUGR, postdated pregnancies, fetal anomalies, uteroplacental insufficiency and iatrogenic.

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Oligohydramnios is associated with increased rate of pregnancy complications and higher incidence of perinatal morbidity, mortality and fetal malformations. (Abraham Golan *et al.,* 1994; Dizon-Townson *et al.,* 1996; Elizabeth *et al.,* 2002; Locatelli *et al.,* 2004)

MATERIALS AND METHODS

This was a prospective study which was conducted over a period of one year (January 2014 to January 2015) in Lalla Ded Hospital, an associated hospital of Government Medical College, Srinagar. Clearance was obtained from the institutional ethical committee of Government Medical College, Srinagar. All the patients were studied under preformed proforma including details history, examination and ultrasound assessment. The outcome of pregnancy was noted for both groups of patients.

The selected end points which were used to judge the pregnancy outcome included the following:

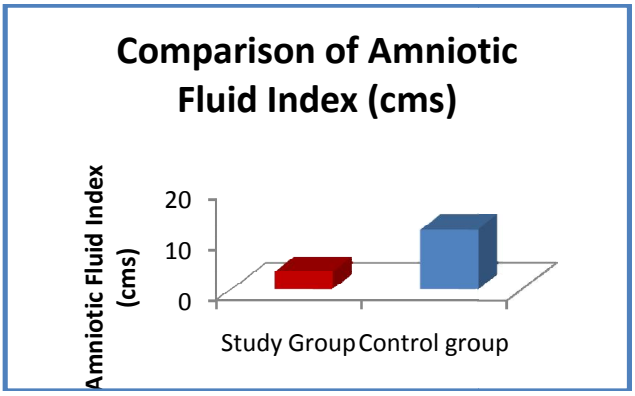
- Rate of cesarean section for fetal distress. Fetal distress was defined as an abnormal antenatal cardiotocographic record alone or in combination with other abnormal fetal biophysical variables or abnormal intrapartum cardiotocographic record.
- Rate of induced labor.
- Presence of meconium in amniotic fluid.
- Apgar score (score of <7 at 5 minutes was considered as abnormal)
- Still birth
- Presence of intrauterine growth retardation (IUGR) was defined as birth weight of <10th percentile for that gestational age.

RESULTS

The statistical data was analyzed with respect to various parameters. There was a non-significant difference in maternal age between the two groups. Maximum number of patients in both groups were at gestational age of 38 to 40 weeks. There was a non-significant difference in parity between the two groups. There were 16 nulliparous women in the study group and 15 nulliparous women in the control group. A highly significant difference was observed in amniotic fluid index between the two groups as is shown in Table 1.

Table 1. Comparison of Amniotic Fluid Index between the study and control group

Group	Mean ± SD	P value
Study group	3.51 ± 0.58	0.000
Control group	11.80 ± 2.62	



Only 2 patients (5%) among control group had IUGR babies as compared to 16 patients (40) in study group (p value 0.000). There was a significant difference in the number of still births between the two groups. There was no still birth in the control group as compared to 5 in the study group. Higher number of babies were having low apgar score in study group (8) than the control group (2). 12 patients in the study group had meconium in the amniotic fluid as compared to 4 in the control group (p value 0.025).

DISCUSSION

The purpose of this study was to determine the pregnancy outcome in patients with a singleton pregnancy, intact membranes, gestational age ≥ 34 weeks and oligohydramnios and to compare the outcome with a comparable group of patients with normal amniotic fluid volume. Oligohydramnios was recognized as a sign of potential fetal compromise. It was associated with an increased rate of pregnancy complications and higher incidence of perinatal morbidity and mortality. The most likely causes for the occurrence of oligohydramnios are post term pregnancy, severe IUGR, fetal congenital anomalies especially those involving the urinary tract and premature rupture of membranes. (Lane *et al.,* 1984) Oligohydramnios is a common finding in severe IUGR. This usually happens with in the context of maternal diseases such as chronic hypertension, pre-eclampsia, chronic renal disease and connective tissue disorders. The relationship between amniotic fluid volume and fetal growth was studied by Chamberlain *et al*. (1984). They found that the incidence of IUGR was increased when the amniotic fluid volume was decreased. The most likely cause of oligohydramnios in IUGR is decreased fetal urinary output caused by redistribution of the blood flow with preferential shunting to the brain and decrease in renal perfusion. (Baron *et al.,* 1995) The mechanism of production of oligohydramnios in prolonged pregnancy also seems to be diminished fetal urine production. (Preshit Chate *et al.,* 2013; Lewis Shanker *et al.,* 1991) The outcome of pregnancy in patients with oligohydramnios in the second trimester is poor. (Barss *et al.,* 1984) About 60% of fetuses with prolonged oligohydramnios before 28 weeks develop pulmonary hypoplasia. Various malformations of the fetal musculo-skeletal system may occur due to fetal compression and limitation of its possible movements. Oligohydramnios in the late pregnancy causes cord compression and in turn fetal distress. This leads to occurrence of abnormal fetal heart rate patterns. There is also a higher incidence of preterm delivery, induced labor, caesarean section for fetal distress low apgar score, meconium aspiration, still birth, intra-uterine fetal death, IUGR, congenital malformations, neonatal ICU admissions and neonatal deaths.

Therefore management of oligohydramnios warrants increased antepartum surveillance for early detection of pregnancy complications and fetal scanning to diagnose malformations or growth restriction. Termination of pregnancy should be considered once pulmonary maturity is reached and in cases of pulmonary immaturity whenever the slightest signs of fetal distress appear. The delivery should be conducted under circumstances that allow appropriate support and intervention on behalf of the fetus.

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