Pregnancy Outcome after Antepartum Diagnosis of Oligohydramnios Amniotic Fluid Index <5 CM at or beyond 34 Weeks of Gestation

Dr. R. Sri Aishwarya MD OG¹, Dr. Lavanya K Md (OG) DCH²

¹Senior Resident, Obstetrics and Gynaecology, Institute of social obstetrics and Govt Kasturba Gandhi hospital and Madras Medical College. The Tamilnadu Dr. M.G.R Medical University, Chennai-600005, India

²Senior Assistant Professor, Obstetrics and Gynaecology, Institute of Social Obstetrics and Govt Kasturba Gandhi hospital and Madras Medical College. The Tamilnadu, Dr. M.G.R Medical University, Chennai-600005, India

Abstract: Oligohydramnios refers to amniotic fluid volume that is less than expected for gestational age. It is typically diagnosed by ultrasound examination and described quantitatively. This study is conducted to determine whether a low AFI in the absence of any high risk factors has any significant effect on obstetric outcome. This prospective case control study was conducted at Rajah Muthiah medical college hospital, Annamalainagar over a period of 24 months. This study consists of an analysis of pregnancy outcome in 50 cases with diagnosis of oligohydramnios by ultrasound after 34 weeks of gestation compared with 50 controls with no oligohydramnios and matched for other variables like age, parity & gestational age. An amniotic fluid volume more than the two standarddeviation below the mean for specific gestation age or volume reduced below 5th percentile for particular gestational age would define oligohydramnios. Volume less than 300ml at term would constitute oligohydramnios. The incidence varies from 0.5% to 5%.

Keywords: amniotic index, ultrasound, oligohydramnios, pregnancy, apgar scor, fetal distress

1. Introduction

Amniotic fluid surrounds developing fetus in amniotic sac providing several benefits to the fetus. Despite decades of investigations, the regulation of amniotic fluid volume and composition remains incompletely understood. The purpose of taking group of women with oligohydramnios at or beyond 34 weeks of pregnancies is because of the fact that the etiology, management and the outcome is different in late onset oligohydramnios compared to early onset oligohydramnios. Appreciation of importance of amniotic fluid volume as an indicator of fetal status and oligohydramnios as an indicator of chronic fetal hypoxia is a relatively recent development. Progressive improvements in ultrasonographic techniques have made it possible to assess the amniotic fluid volume relatively accurately. A finding of diminished AFI is generally perceived as a sign of placental insufficiency. Apprehensions are expressed regarding such isolated oligohydramnios leading to increased obstetric interventions without improvement in perinatal outcomes.

2. Aim

• To find out if low amniotic fluid index has any clinical significance in low risk pregnancies.
• To study the adverse perinatal outcomes.

3. Materials & Methods

This study consists of an analysis of pregnancy outcome in 50 cases with diagnosis of oligohydramnios by ultrasound after 34 completed weeks of gestation compared with 50 controls with no oligohydramnios and matched for other variables like age, parity and gestational age.

For all selected cases, thorough history was taken and complete examination was done. Clinical evidence of oligohydramnios was looked. The previous obstetric records and ultrasound reports were reviewed. Ultrasound examination was done and amniotic fluid index was calculated by four quadrant amniotic fluid volume measurement technique. All women in study and control group were followed up in labour, mode of delivery & babies were followed up for apgar, NICU admission.

4. Results

The mean age for study group was 24.1 years and that of control group was 23.1years. There was no difference in the mean age between two groups statistically. There were 28...
The difference was statistically significant (P<0.01). This study shows AFI<5cm cases are going for LSCS quite high.

**Apgar score < 7**

<table>
<thead>
<tr>
<th>Apgar score</th>
<th>Study group</th>
<th>Control group</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 minute</td>
<td>34</td>
<td>68</td>
</tr>
<tr>
<td>5 minute</td>
<td>16</td>
<td>32</td>
</tr>
</tbody>
</table>

The difference in the occurrence of Apgar score was not statistically significant. The mean birth weight was 2.52 kg in study group and 2.7kg in control group.

**Admission to Neonatal ward**

<table>
<thead>
<tr>
<th>Study group</th>
<th>No</th>
<th>Control group</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td>70</td>
<td>17</td>
<td>34</td>
</tr>
</tbody>
</table>

35 neonates were admitted for birth asphyxia, neonatal seizures, meconium aspiration. The difference in two groups was statistically significant (P<0.01). There were 4 early neonatal deaths in study group and no neonatal death in control group.

### 5. Discussion

The rate of non-reactive NST is 52% in present study which is similar to other studies conducted by Kumar et al. and Srijita et al. Theomnious FHR decelerations noted in 46% in present study is similar to 48% and 36% in studies conducted by Casey et al. and Srijita et al. respectively. In our study meconium stained liquor was 34% which is similar to study conducted by Gupta et al., Chandra et al. In our study LSCS done for fetal distress was 42% which is similar to study conducted by Casey et al., Srijita et al. Oligohydramnios has been used as a screening test for development of fetal distress & subsequently during intrapartum period.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Baron et al</th>
<th>Chandra et al</th>
<th>Present study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity</td>
<td>78%</td>
<td>76.92%</td>
<td>87.5%</td>
</tr>
<tr>
<td>Specificity</td>
<td>74%</td>
<td>73%</td>
<td>72.72%</td>
</tr>
<tr>
<td>Positive predictive value</td>
<td>33%</td>
<td>50%</td>
<td>70%</td>
</tr>
<tr>
<td>Negative predictive value</td>
<td>95%</td>
<td>99%</td>
<td>88.8%</td>
</tr>
</tbody>
</table>

The efficacy of oligohydramnios in predicting fetal distress and requirement of LSCS had a sensitivity of 87.5% and negative predictive value of 88.8%. But specificity and positive predictive value were poor. So this can be considered as a screening test for occurrence of fetal distress in intrapartum period requiring caesarean delivery.

In our study the rate of occurrence of Apgar score <7 group was 32% and it is similar to other studies. The rate of occurrence of birth weight <2.5 kg in present study is 31% and similar to other studies. In present study the rate of NICU admission was 70% & it is high compared to other studies. In our study there were 4 neonatal deaths while there was no neonatal death in other studies.
6. Conclusion

An amniotic fluid index < 5cm detected after 34 weeks is an indicator of perinatal outcome. Determination of AFI can be used as an adjunct to other fetal surveillance methods. Determination of AFI is a valuable screening test for predicting fetal distress in labour requiring caesarean section. It helps to identify those infants at risk of poor perinatal outcome. In presence of oligohydramnios the occurrence of non-reactive NST, abnormal FHR tracings during labour, thick meconium stained liquor, fetal distress, rate of LSCS, low 5 minute Apgar score, low birth weight, perinatal morbidity is high.

In our study compared to control group the occurrence of non-reactive NST, Induction of labour, occurrence of fetal distress and caesarean section for fetal distress ,neonates admitted to NICU was high in case group (AFI< 5cm) and difference in two groups was statistically significant. The occurrence of thick meconium stained amniotic fluid was more than twice in oligohydramnios group compared to control group. Occurrence of caesarean section was high if oligohydramnios was associated with non-reactive NST.

References