



Perinatal Outcome After Antepartum Diagnosis of Oligohydramnios at or Beyond 34 Weeks of Gestation

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Oligohydramnios, is associated with increased pregnancy complications, congenital anomalies and perinatal mortality. Its incidence is 2.3% of all the pregnancies(1).

An accurate and reproducible method of determining abnormality in amniotic fluid volume (AFV) is sonographic assessment of amniotic fluid index (AFI). An AFI \leq 5 cm, consistent with most sonographic criteria has been used as an indication for delivery of infants at or near term. In this prospective study 50 singleton pregnant females with gestation age \geq 34 weeks with AFI \leq 5 cm were analysed for perinatal outcome. After taking a detailed history and complete examination, AFI was obtained sonographically by dividing the maternal abdomen into four quadrants; the linea nigra was used to divide abdomen into right and left halves and umbilicus was used to separate upper and lower halves. The largest amniotic fluid pocket was identified in each quadrant and its vertical diameter taken. All four vertical diameters were summed up to obtain AFI in cm (2). All women were followed-up till delivery; and pregnancy and perinatal outcomes were recorded.

Maximum number of women (n = 24) were in the age group 21-25 years (48%). Sixty per cent women were primigravida, 28% women presented at gestational age 34-36 weeks. Pregnancy and perinatal outcomes are shown in Table I.

On relating various perinatal outcomes in relation to sonographic findings of AFI, we found that as the volume of amniotic fluid increases, the rate of complications during pregnancy, labour and perinatal period decreases accordingly (Table II).

Labour was spontaneous in onset in 28% and induced in 58% women. Elective caesarean section was done in

14%; 44% women had normal vaginal delivery and 56% underwent caesarean section, out of which 42% had fetal distress (Table II).

Table I : Pregnancy and perinatal outcomes outcomes (n = 50)

1.	Induction of labour	29 (58%)
2.	Vaginal delivery	22 (44%)
3.	Caesarean section	28 (56%)
	Fetal distress	21 (42%)
	Elective	7 (14%)
4.	Meconium stained liquor	24 (48%)
5.	Abnormal FHR	19 (38%)
6.	Apgar score < 7 at 5'	6 (12%)
7.	Birth weight (< 2.5 kg)	29 (58%)
8.	Respiratory distress	3 (6%)
9.	Meconium aspiration	2 (4%)
10.	NICU admissions	8 (16%)
11.	Stillbirths (macerated)	2 (4%)
12.	Neonatal deaths	3 (6%)

The relationship between sonographically detected oligohydramnios and perinatal morbidity and mortality has been well established by Manning and Platt.(3) Garmel *et al.*(4) supported that 67% of women with oligohydramnios were nullipara while we observed 60% of the women to be primigravida. Casey *et al.* (1) evaluated 147 pregnancies complicated by oligohydramnios. Induction of labour was done in 42%, out of which 32% were delivered by caesarean section. In the present series, 58% women were induced at 37 completed weeks while 28% went into spontaneous labour. Chauhan *et al.* (5) concluded that AFI \leq 5 cm is associated with increased risk of caesarean section for fetal distress and low apgar score at 5 minutes. Fifty-six

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Table II : Perinatal outcomes in relation to AFI

S. No.	Perinatal outcome	AFI		
		2-3 cm (n = 8)	> 3-4 cm (n = 9)	> 4-5 cm (n = 33)
1.	Abnormal FHR	6 (75%)	4 (44.44%)	9 (27.27%)
2.	Meconium staining	8 (100%)	8 (88.88%)	8 (24.24%)
3.	Caesarean section for FD	7 (87.50%)	6 (66.66%)	8 (24.24%)
4.	A/S < 7 at 5'	2 (25%)	1 (11.11%)	3 (9.09%)
5.	Respiratory distress	1 (12.5%)	1 (11.1%)	1 (3.03%)
6.	Meconium aspiration	1 (12.5%)	–	1 (3.03%)
7.	NICU admission	3 (37.57%)	2 (22.22%)	3 (9.09%)
8.	Stillbirths	1 (12.5%)	–	1 (3.03%)
9.	Neonatal deaths	1 (12.5%)	1 (11.11%)	1 (3.03%)

per cent of women in present series were delivered by caesarean section. When AFI was ≤ 5 cm, the incidence of meconium staining and variable decelerations increased. Meconium stained liquor was seen in 48% of women by us, while Yousseff *et al.* (6) identified it in 40% of females. This suggests that there is high incidence of meconium staining and poor placental reserve in studies conducted in developing nations.

Sarno *et al.* (7) noted a significantly higher rate of fetal distress and low apgar score in women with AFI ≤ 5 cm. This is reported to be due to head and cord compression. Golan *et al.* (8) reported a low apgar score at 5 minutes in 4.6% babies, in contrast to a figure of 12% noted by us. This difference in the rates observed is because of better intrapartum fetal assessment facilities available in developed nations. Voxman *et al.* (9) observed that women with oligohydramnios were significantly more likely to have abnormal fetal heart rate tracings (14.9% vs 5.3%; $p = 0.005$) and there was an increased rate of caesarean section for fetal distress (9.7% vs 5%; $p = 0.06$). They concluded that liberal use of amnio infusion in women diagnosed with oligohydramnios might have resulted in improved outcomes which was not seen in previous studies. Desai *et al.* (10) found an increase in variable decelerations in women with low AFI which was statistically of just borderline significance. Casey *et al.* (1) found respiratory distress in 3.4% of neonates at birth in contrast to 6% as noted by us. The incidence of NICU admission was found to be 18.5% by Garmel *et al.* (4) which is in accordance to our results (16%).

Oligohydramnios has been recognised as a clinical hallmark of impending severe perinatal compromise. We concluded a 10% perinatal deaths, whereas Casey *et al.* (1) reported 6.4% perinatal deaths.. Ja-Young *et*

al. (11) , in a recent study have concluded that in the borderline AFI group, the presence of abnormal dorsal velocimetry measurement was related to adverse perinatal outcomes and mandates closer antenatal surveillance.

To conclude, oligohydramnios is associated with a high rate of pregnancy complications and increased perinatal morbidity and mortality. We believe that AFI assessed antepartum or intrapartum would help to identify women who need increased antepartum surveillance for pregnancy complications, and as such women should be cared for in a unit capable of managing such complications effectively.

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