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To compare perinatal outcome in normal and high risk (Oligo & Poly) pregnancies

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Abstract
Objective: This study was to Compare Perinatal Outcome in Normal and High Risk (Oligo & Poly) Pregnancies, conducted in the Department of Obstetrics and Gynaecology, Amaltas Institute of Medical Sciences, Dewas (M.P.)
Result: Among total patients 300, at the end of 01 min the Apgar score 50.5 of oligohydramnios and 57.1 ploy hydramnios whereas at the end of 05 min the score has improved and 24.2% of oligohydramnios and 28.6% of ploy hydramnios seen to have Apgar score of<7.Chi Square Test Applied P-value-0.00 (p value<0.05 significant at 95% confident intervals) Significant correlation of SGA fetus with oligohydramnios which are associated with 50.2% of SGA fetus. Total patients among AFI abnormalities is 283, Normal - 88(31.1%), Oligo 183(64.6%) & Poly 12(4.3%).
Conclusion: Low AFI specifically <5cmandabnormal color Doppler were significantly associated with adverse perinatal outcome in terms of low Apgar score and increased NICU admission, IUGR fetus. But Antepartum Oligohydramnios seen to have intrapartum fetal heart rate abnormalities causing fetal distress leading to increased cesarean section and adverse perinatal outcome in terms of MSL. Also Severe polyhydramnios i.e., >35cm is associated with adverse outcomes including prematurity, SGA, low 5-min Apgar score, prenatally diagnosed congenital anomalies and perinatal mortality. These cases require intensive fetal surveillance and proper antepartum and intapartum fetal monitoring in order to improve fetal outcome.

Keywords: Perinatal, pregnancy, outcome & oligo & poly

Introduction
High-risk pregnancy is one of larger risk to the mother or her fetus when compared to normal pregnancy. A High risk pregnancy, where the mother, fetus, or neonate is at increased risk of morbidity or mortality before or after delivery High risk pregnancy contributes to 80% of maternal mortality due to severe bleeding / hemorrhage (25%), infections (15%), unsafe abortions (13%), eclampsia (12%), obstructed labour (8%) and other direct causes (8%). Indirect causes such as malaria, HIV/AIDS and cardiovascular diseases account for 20%. [1] the risk factors which include high risk pregnancy are existing medical conditions eg. BP, Diabetes mellitus, HIV positive, etc., maternal obesity, multiple births and young or old age. In India, there were 2.6 million stillbirths globally with more than 8200 deaths a day.
Perinatal mortality is directly related, not only to gestational age at presentation, but also the severity of oligohydramnios. The perinatal mortality associated with a single pocket of amniotic fluid measure, <1.0 cm, 1.0 - 2.0 cm, and from 2.0 -8.0 cm is 109.7, 37.7 and 1.97/1000 respectively (Phelan JP [2], 1985).
A number of biological and social factors such as age, parity, social class and past obstetric history, occupation and psycho social factors and nutritional status influence the perinatal outcome during pregnancy. Hence it should be taken into account while assessing the risk for any pregnant woman [3].

Material & Method
The present study entitled “To Compare Perinatal Outcome in Normal and High Risk (Oligo & Poly) Pregnancies” is conducted in the Department of Obstetrics and Gynaecology, Amaltas Institute of Medical Sciences, Dewas (M.P.), in this study we have included 300 patients during the period from Jan 2016 to Jan 2017. The study is approved by the Ethics Committee of Amaltas Institute of Medical Sciences, Dewas (M.P.) Each patient was told about her inclusion and participation in this study and her informed consent is taken.

- **Inclusion criteria**

1. Antenatal women above 28 wks of gestation period attending Antenatal OPD in AIMS, Dewas.
2. Those with high risk factors and those with previous history of stillbirth.
3. Patients those who give consent.

- **Exclusion criteria**

1. Antenatal women below 28 weeks of gestation period attending Antenatal OPD in AIMS, Dewas.
2. Patients who have IUD at Presentation.
3. Multiple pregnancies, those on any kind of medications.
4. Patients those who do not give consent.

Routine investigations: CBC, Blood Group, BT/CT will be sent, RFT, LFT.

Special investigations: Ultrasonography (Amniotic fluid index), Color Doppler. Three indices are studied in each patient, DFMC in terms of normal, decreased and loss of fetal movements, AFI <5 categorized as oligohydramnios, AFI 5 – 24 categorized as adequate, AFI >24 categorized as polyhydramnios, Color Doppler in terms of normal and abnormal Doppler flow in both MCA and UA.

In every case detail history will be taken &thorough examination (general, systemic and obstetrical) will be done. High risk factors assessed.

Statistical analysis has been carried out in the present study. Results on continuous measurements are presented on Mean±SD (Min-Max) and results on categorical measurements are presented in Number (%).

Significance is assessed at 5% level of significance. Chi-square test has been used to find the significance of study parameters. The Statistical software SPSS 20.0 version has been used for the analysis of the data and Microsoft word and Excel have been used to generate graphs, tables etc.

Results

Table 1: AFI abnormalities and APGAR SCORE of newborns at 1min and 5 min (Total No. of Patients = 300)

AFI	Apgar Score At 1 min		Apgar Score At 5 Min	
	< 7	>7	<7	>7
Adequate	33 37.5%	55 62.5%	11 (12.5%)	77 (87.5%)
Oligohydramnios	100 50.5%	98 49.5%	48 (24.2%)	150 (75.8%)
Polyhydramnios	8 57.1%)	6 (42.9%)	4 (28.6%)	10 (71.4%)
Total	141	159	63	237

Among total patients 300, at the end of 01 min the Apgar score 50.5 of oligohydramnios and 57.1 ployhydramnios whereas at the end of 05 min the score has improved and 24.2% of oligohydramnios and 28.6% of ployhydramnios seen to have Apgar score of<7.

Table 2: AFI Abnormalities in prediction OF SGA fetus

AFI	AGA	SGA	LGA	Total
Normal	61(69.3%)	27(30.7%)	0	88
Oligo	91(49.7%)	92(50.2%)	0	183
Poly	8(66.6%)	3(25%)	1(8.3%)	12
Total	160	122	1	283

Chi Square Test Applied P-value-0.00 (p value<0.05 significant at 95% confident intervals)

The above table shows significant correlation of SGA fetus with oligohydramnios which are associated with 50.2% of SGA fetus. Total patients among AFI abnormalities is 283, Normal - 88(31.1%), Oligo 183(64.6%) & Poly 12(4.3%).

Table 3: High Risk Factors and Perinatal Outcome

High Risk	Number	Percentage
GHTN	33	11%
Preclampsia	30	10%
Eclampsia	5	5%
Prolonged pregnancy	20	6.6%
Breech	15	5%
PROM	16	5.3%
Placenta Previa	6	2%
Rh Negative	5	1.6%
Hypothyroidism	5	1.6%
Chorioamniotis	1	0.3%

The most common maternal high risk factor associated with oligohydramnios is Hypertensive disorders of pregnancy, seen in 68(22.6%) cases.

Discussion

As per our study 24.2% of oligohydramnios and 28.6% of ployhydramnios seen to have Apgar score of <7 which is clinically significant. Casey *et al.* reported an NICU admission rate of 7% in patients with oligohydramnios. Locatelli A *et al.* [4] of 341 patients with oligohydramnios, found no significant difference for Apgar score of less than 7 at 5 minute in study and control group. In Manning *et al.* [5] 15% babies had APGAR score < 7. In Julie M Jhonson *et al.* [6] 20% babies had NICU admission. In Manning *et al.* [7] and Raj Sariya *et al.* [8], 43% and 88.88% respectively.

Incidence of SGA fetus in our study seen to be 43.6%comparable with Philipson EH *et al.* [9] 60% AGA and 40% SGA and In Manning *et al.* with64% AGA and 36% SGA fetuses. This high percentage of SGA babies suggesting correlation of IUGR with Oligo-hydramnios. DFMC seen to have the high sensitivity of 69.4%. As per the study done by O'Sullivan *et al.*, 2009 [10]; Tveit *et al*., 2009 [11] women who present with decreased fetal movements also have a higher incidence of fetal growth restriction and preterm birth but a high rate of false positive cases thereby over diagnosing the condition and may lead to iatrogenic prematurity if it is relied upon alone. AFI with 48.9% sensitivity and 69.3% specificity has correlation with detection of SGA fetus but as the color Doppler has high specificity Of 71%, it is once again proved as gold standard in the diagnosis of SGA(122) and there by IUGR fetus. Those with abnormal color Doppler resulted in 47.7% SGA fetus. Hence Ultrasound assessment of amniotic fluid volume should not be used as the only form of surveillance in SGA fetuses. [12]

Conclusion

Low AFI specifically <5cmandabnormal color Doppler were significantly associated with adverse perinatal outcome in terms of low Apgar score and increased NICU admission, IUGR fetus. But Antepartum Oligohydramnios seen to have intrapartum fetal heart rate abnormalities causing fetal distress leading to increased cesarean section and adverse perinatal outcome in terms of MSL. Also Severe polyhydramnios i.e., >35cm is associated with adverse outcomes including prematurity, SGA, low 5-min Apgar score, prenatally diagnosed congenital anomalies and perinatal mortality. These cases require intensive fetal surveillance and proper antepartum and intapartum fetal monitoring in order to improve fetal outcome.

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