Title: Study of cerebroplacental ratio (CPR) in Term Low risk pregnancy and its association with neonatal outcomes







INTRODUCTION

CPR has proved to be pivotal for monitoring and decision making in highrisk pregnancies like FGR (foetal growth restriction). Impact of abnormal CPR (less than 10th centile for gestational age) on term low risk pregnancies needs to be evaluated.

MATERIALS AND METHODS

- Population: 100 Term low risk women
- Intervention: Doppler analysis done in late 3rd trimester(> 36 weeks)
- Comparison: CPR < or > 10th centile
- Outcome: Neonatal wellbeing and NICU admission
- Time of study: 3 months
- Place of study: Chinmaya Mission Hospital, Bangalore
- Type of study: Observational study

RESULTS AND DISCUSSION

TOTAL WOMEN:100

■<10TH CENTILE ■>10TH CENTILE



Criteria		CPR < 10 th centile	CPR > 10 centile	P – value
Mode of delivery	VD	1	8	0.58
	LSCS	9	82	
LSCS for foetal indication	Yes	7	22	0.01
	No	1	36	
NICU admission	Yes	5	28	0.228
	No	5	62	
APGAR <7 at 1 min	Yes	5	11	0.001
	No	5	79	

Labor monitoring, delivery and immediate neonatal health are all impacted by CPR. Following parameters were compared and Chisquare test used to calculate p-value. Women with CPR < 10th centile were more likely to undergo LSCS for foetal indication(77% vs 37.8%).

Babies born to women with CPR < 10th centile had lower APGAR scores at 1 min(p<0.05). Although born with lower APGAR scores, babies with CPR<10th centile were not found to have higher rates of NICU admission

Study by Anand et al, also concluded that women with abnormal CPR(prevalence 19.6%) showed higher(p<0.05) rates of LSCS, lower APGAR scores and increased NICU admissions(1). Systematic review of 21 studies also showed increased adverse outcomes in term neonates born with abnormal CPR with a 23% detection rate (better than umbilical artery PI)(2). Bligh et al studied 458 low risk women and concluded that CPR < 10th centile has poor sensitivity but high negative predictive value in detecting adverse neonatal outcomes(3).

CONCLUSION

Utility of CPR in Term low risk pregnancies for decision making is still debatable. With available data, CPR should be considered as a screening tool to stratify women at term and closely monitor those with abnormal values.

REFERENCES

- (1) Anand S, Mehrotra S, Singh U, Solanki V, Agarwal S. Study of Association of Fetal Cerebroplacental Ratio with Adverse Perinatal Outcome in Uncomplicated Term AGA Pregnancies. J Obstet Gynaecol India. 2020 Dec;70(6):485-
- (2) Dunn L, Sherrell H, Kumar S. Review: systematic review of the utility of the fetalcerebroplacental ratio measured at term for the prediction of adverse perinataloutcome. Placenta 2017;54:68-75.
- (3)Bligh LN, Alsolai AA, Greer RM, et al. Cerebroplacental ratio thresholds measured with win two weeks of birth and the risk of cesarean section for intrapartum fetalcompromise and adverse neonatal outcome. Ultrasound Obstet Gynecol2018;52(3):340-346.