Impact of Abnormal foetal Heart Rate With Meconium Stained Liquor Amnion on Birth Scores

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Summary

Combination of different signs of foetal distress, e.g. heart rate and meconium stained liquor amnii, has significant impact on lowering of birth score than any single sign. Combination of foetal bradycardia with thickly stained liquor amnii has maximum effect on lowering of birth score in comparison to the combination of foetal bradycardia with lightly stained liquor amnii. Foetal tachycardia with thickly stained liquor amnii has lesser impact and still less is the impact of the combination of foetal tachycardia with lightly stained liquor amnii on lowering the birth score.

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Introduction:

Foetuses may show one or more signs of distress, namely abnormal foetal heart rate, meconium stained liquor amnii or both at a time. The clinical signs of foetal distress in combination are more sinister than a single one and the more dangerous is the combination of signs, the worst is the prognosis of neonates. The different types of combinations of the signs of foetal distress namely, foetal tachycardia or bradycardia coupled with either thickly or lightly stained liquor amnii with meconium, influence the birth score in their own ways.

Materials and Methods:

The present study was carried out in the labour room of Obstetrics and Gynaecology Department of P. M. C. H., Patna. Foetal heart rate more than 160/minute was defined as tachycardia and less than 120/minute as bradycardia in between two uterine contractions. The staining of white and dry cotton swab pressed gently against the vulva of the mother gave the colour of discharged liquor amnii as thickly or lightly stained with meconium. The scoring was done with the modified Apgar's method (1953) developed by DeSouza et al. (1975). Only those cases were included in the present series of work who were alive at least for one minute of age.

Discussion:

A total of 78 cases exhibiting abnormal foetal heart rate and meconium stained liquor amnii as the indices of foetal distress, were studied and birth scores of such neonates were recorded.

Out of the six cases exhibiting foetal tachycardia plus lightly stained liquor amnii as the sign of foetal distress 3 (50%) were on lower side with '0-3' scores at one minute of age and all of them improved with higher scores of '4-6' at five minutes of age. This shows that the impact of this combination of two signs of foetal distress is very little on lowering of birth scores. This finding supports the views of Ambramovici et al. (1974) who postulated that both the signs of foetal distress might be result of temporary state of foetal anoxia, which is further vindicated by improvement of all those three low scores by the age of 5 minutes.

In another category of 12 cases exhibiting foetal bradycardia with lightly stained liquor amnii as the sign of foetal distress, 11 cases (91.66%) scored on lower side at one minute of

Observations:

Clinical sign of foetal distress	Age of Scoring	SCORE - BOARD																Grand Total
		Lower Side								Higher Side								No. of improved cases
		0	1	2	3	Total	Deaths	4	5	6	Total	7	8	9	10	11	12	
1. Foetal tachycardia plus lightly stained liquor amnii	At-1 minute	0	0	0	3	3	-	1	2	0	3	-	-	-	-	-	-	6
	At-5 minute	0	0	0	0	0	0	3	1	2	6	-	-	-	-	-	-	3
2. Foetal bradycardia plus lightly stained liquor amnii	At-1 minute	0	0	0	4	7	-	1	1	0	1	-	-	-	-	-	-	12
	At-5 minute	0	0	0	4	4	-	7	1	0	8	-	-	-	-	-	-	7
3. Foetal tachycardia plus thickly stained liquor amnii	At-1 minute	0	0	0	3	3	-	1	0	0	1	-	-	-	-	-	-	4
	At-5 minute	0	0	0	0	0	-	0	4	0	4	-	-	-	-	-	-	3
4. Foetal bradycardia plus thickly stained liquor amnii	At-1 minute	0	0	0	14	56	-	0	0	0	0	-	-	-	-	-	-	56
	At-5 minute	0	0	0	18	37	-	14	5	0	5	-	-	-	-	-	-	5

age and out of that 7 cases (63.63%) improved with '4 - 6' scores and 4 cases (36.37%) were left with lower scores by approaching the age of 5 minutes. This shows that the combination of those two signs of foetal distress had significant impact on lowering of the birth scores particularly in comparison to the group exhibiting foetal tachycardia with lightly stained liquor amnii as sign of foetal distress. This observation is in conformity with those of Hellman et al. (1958), Walker (1969), Fenton et al. (1962), Tipton et al. (1971), and DeSouza et al. (1975) who postulated that slow foetal heart rate (bradycardia) with passage of meconium stained liquor amnii were most commonly due to foetal anoxia with their repercussion in lowering of birth score.

4 cases exhibiting foetal tachycardia with thickly stained liquor amnii were studied out of which 3 cases (75%) had the scores on lower side (0-3) and that too improved with 4 - 6 scores of higher side by approaching the age of five minutes. Though the cases were very few in this group such combination of the signs of foetal distress had definite impact on lowering of the birth scores but the impact in lighter than the combination of signs of foetal bradycardia with lightly stained liquor amnii.

In other group 56 cases exhibiting foetal bradycardia with thickly stained liquor amnii were studied and surprisingly all (100%) had lower scores of (0 - 3) at one minute of age. Only five out of these cases (8.93%) could improve with higher scores of '4 - 6' at 5 minutes of age, 37 cases (66.07%) had low birth scores of 1 to 3 till the age of 5 minutes and remaining 14 cases (25%) died by the age of 5 minutes. This observation is fully in consonance with those of Hellman et al. (1958), Walker (1959), Fenton et al. (1962), Tipton et al. (1971), Ambramovici et al. (1974) and DeSouza et al. (1975). They postulated that foetal bradycardia with passage of thickly stained liquor amnii was the result of profound and prolonged degree of foetal anoxia exhibiting decompensated state of foetal distress with foetal acidemia and hypercarbia.

Out of the above four combinations of signs of foetal distress, the combination of foetal bradycardia with thickly stained liquor amnii were placed at the top, then came the impact of combination of foetal bradycardia with lightly stained liquor amnii in lowering of birth scores. The combinations of foetal tachycardia with thickly stained liquor amnii had lesser impact than the aforesaid two combinations of foetal distress and still lesser was the impact of the combination of signs of foetal tachycardia with lightly stained liquor

amni on the birth scores.

This study of four categories of cases exhibiting different combinations of abnormal foetal heart rate and passage of meconium stained liquor amni gives an impression of rating the gravity of bad prognosis with lower birth scores even before the birth of the neonates and alarm the staff deputed for resuscitating the neonates expected to be born with lower birth scores accordingly in order to bring down the perinatal mortality and morbidity, so high in our country.

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