

STUDY ON LOW APGAR SCORE BABIES BORN BY CAESAREAN SECTION

By

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SUMMARY

This study was conducted on 78 babies born with low Apgar Score among 350 cases of Caesarean Section. These 78 babies (22.2%) had low Apgar Score less than 7 at one minute and 46 babies (13.2%) continued to have low Apgar Score less than 7 at 5 minutes. These babies were followed up to 7 days of life. 34.8% of the babies had morbidity in one form or the other. Twenty babies out of 46 died giving rise to a mortality rate of 43.5% among low Apgar Score babies. Foetal loss was high among babies who had meconium along with fetal heart rate abnormalities especially bradycardia and irregularity as compared to fetal heart rate changes or meconium alone.

Introduction

Foetal distress is clinically manifested as tachycardia, bradycardia and irregularity in foetal heart rate. Passage of meconium per vagina is an important sign of foetal distress. Fitz Gerald and McFarlane (1955) showed that foetal heart rate less than 110 per minute accounted for most of the foetal deaths. According to parameters denoted by Apgar a scoring procedure has been designed, which is related to the oxygenation status of fetus at or immediately after birth. Morbidity and mortality is high among babies born with low Apgar Score.

Material and Methods

This study was conducted in the department of Obstetrics & Gynaecology at Maulana Azad Medical College & Associated L.N.J.P.N. Hospital, New Delhi on 78 babies born following Caesarean Section and with low Apgar Score at one minute and 46 babies continued to have low Apgar Score at 5 minutes. All the babies with Apgar Score of 7 or less were included in this study. The condition of new born at birth was recorded and babies were followed up to 7 days of life. Relevant investigations on these babies were done and mortality and morbidity was recorded.

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Observations

Table I shows that at one minute 78 (22.3%) babies had low Apgar Score and

at five minutes 46 (13.2%) babies continued to have low Apgar Score.

TABLE I
Distribution of Babies According to Apgar Score

Apgar Score	One Minute		Five Minutes	
	No.	%	No.	%
0-2 (Severe birth asphyxia)	15	4.3	7	2.0
3-5 (Moderate birth asphyxia)	18	5.1	9	2.6
5-7 (Mild birth asphyxia)	45	12.8	30	8.5
8-10 (No asphyxia)	272	77.7	304	86.8

Table II shows that 43.5% of babies with low Apgar Score at 5 minutes were lost.

TABLE II
Outcome of Babies with Low Apgar Score at 5 Minutes

	No. of babies	Percentage
Morbidity	16	34.81
Mortality	20	43.50
Healthy	10	21.7
Total	46	100.0

Table III shows that 34.8% neonates with low Apgar Score at 5 minutes showed morbidity of some nature or other upto early neonatal period. Septicemia was the commonest morbidity found.

Table IV shows that 20 babies died out of 46 giving rise to mortality rate of 43.4% among babies born with low Apgar Score. Severe birth asphyxia and

TABLE III
Causes of Morbidity in Low Apgar Score Babies (Total No. of Cases 46)

Morbidity	Number	Incidence %
Septicemia	5	10.8
Prematurity	4	8.7
Pneumonia	2	4.3
Hyperbilirubinaemia	3	6.5
H M D	2	4.3
No morbidity	10	21.7

septicemia was responsible for foetal death in majority of cases during first seven days of life.

TABLE IV
Causes of Mortality in Low Apgar Score Babies (Total No. of Cases 46)

Cause	No. of cases	Incidence %
Death due to severe birth asphyxia	6	13
Septicemia	7	15.2
Multiple Congenital malformations	3	6.5
Prematurity	2	4.3
Hyaline membrane disease	2	4.3
Total	20	

There were 79 cases who had Caesarean Section for foetal distress. 52 babies were born with Apgar Score less than 7 at 1 minute and 21 continued to have low Apgar Score less than 7 at 5 minutes.

It is clear from Table V that at 5 minutes 21 out of 79 babies or 26.5% had some kind of asphyxia. Out of these 21 babies six died. It was observed that when foetal heart changes or meconium alone was noticed out of 65 babies only one baby was lost. On the other hand among 14 cases who had meconium along

TABLE V

Perinatal Loss in Relation to Signs of Foetal Distress and Low Apgar Score at 5 Minutes
Total births—79, Apgar Score 7 or less = 21.

Sign	Total births	Severe birth asphyxia (Apgar 0-2)		Moderate birth asphyxia (Apgar 3-5)		Mild birth asphyxia (Apgar 5-7)		No asphyxia (Apgar 8-10)	
		PD	S	PD	S	PD	S	PD	S
1. Bradycardia alone	21	—	—	—	1	—	3	—	17
2. Tachycardia alone	30	—	1	1	2	—	4	—	28
3. Foetal heart irregularities	8	—	—	—	1	—	—	—	13
4. Meconium alone	6	—	—	—	—	—	1	—	—
5. Bradycardia with meconium	7	3	—	—	—	—	1	—	—
6. Tachycardia with meconium	4	—	—	—	—	—	1	—	—
7. Foetal heart irregularities with meconium	3	2	—	—	—	—	—	—	—
Total	79	5	1	1	4	0	10	0	58

Abbreviations used—PD = Perinatal deaths. S = Survivors.

with foetal heart abnormalities especially bradycardia or irregularities, 5 babies were lost. Six babies were born with severe birth asphyxia (0-2) only one survived and out of five babies born with moderate asphyxia (3-5 Apgar Score) only one was lost.

Discussion

According to Fitz Gerald and McFarlane (1955) and Mintz (1960) foetal distress was a major factor for perinatal mortality. In modern obstetric practice foetal distress is the leading indication for Caesarean Section. In present series 79 cases out of 350 had Caesarean Section for foetal distress giving rise to an incidence of 22.5%. Meizner (1981) from Israel found that in 1969 only 35% of Caesarean Sections occurred for foetal indication and in 1979 it rose to 54%.

This coincided with the advent of continuous intrapartum foetal monitoring with scalp pH for the diagnosis of foetal distress. Amirika (1981) and Rosenberg (1981) concluded that combined monitoring with scalp pH may reduce the surgical intervention for foetal distress by 50%. Gupta (1981), Sagar (1983) reported incidence of Caesarean Section for foetal distress as 23.3% and 27.56% respectively. In present series 13.2% of babies continued to have asphyxia at 5 minutes. This high rate could be due to fact that 22.5% of cases had Caesarean Section for foetal distress.

Hibbard (1976) has shown that over the past 10 years the incidence of morbidity has been 25% for a Apgar Score of 1 to 3, 10% for a score of 4 to 7 and 1.7% for a score of 8 or more. In present study morbidity among low Apgar Score babies (less than 7) was 34.8%. Septi-

emia was responsible for morbidity in 10.8% of cases and 34.8% of neonates with low Apgar Score had morbidity of some kind or the other in early neonatal period.

Twenty babies out of 46 died giving rise to mortality rate of 43.3%. Severe birth asphyxia, and septicemia was responsible for foetal death in majority of cases. In present study it was observed that meconium with foetal heart rate abnormalities especially bradycardia and irregularity was associated with high foetal loss as compared to meconium or foetal heart rate irregularity alone. Both septicemia and asphyxia are preventable factors. Birth asphyxia can be prevented by meticulous supervision and timely intervention for delivery.

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