ISSN: 0975-3583, 0976-2833 VOL14, ISSUE 08, 2023

MATERNAL RISK FACTORS ASSOCIATED WITH SMALL FOR DATE INFANTS.

PRIYANSI BABUBHAI PATEL, NIRAVKUMAR ZINABHAI GARASIA, KINJAL ISHVARBHAI PATEL KAUSHALKUMAR BABUBHAI PATEL,

Background: Full term small for date newborns are important group of neonates who do not get due attention as they are considered more mature than preterm neonates. Being a multi factorial phenomenon many maternal and fetal factors are associated with SFD babies. Many of these are interrelated We conducted this study to identify maternal risk factors associated with small for date newborns.

Objective: To identify the maternal factors associated with delivery of the full term small for date infants.

Design: Observational, cross-sectional study.

Setting: Postnatal Ward, Civil Hospital Ahmadabad.

Participants: Out of 1523 total live births, 351 SFD babies were included in the study

Method: All full term SFD inborn babies from month June to August 2013 were included. Birth weight was recorded on pre-calibrated electronic weighing scale . Gestational age was obtained from the recall of the date of last menstrual period if available and modified Ballard scoring done immediately after birth. Maternal factors including age, parity, education, and socio-economic status, and antenatal care, weight gain during pregnancy, birth spacing, hypertension, anemia and nutritional status were studied.

Results: The prevalence of small for gestational age babies is 22.1%. Maternal factors significantly associated were anemia , low socio economic status , inadequate antenatal care , PIH , maternal age and parity .

Conclusion: Maternal malnutrition, inadequate antenatal care, poor weight gain during pregnancy, short birth interval, low maternal age is significant risk factors for small for date infants.

Key words: maternal risk factors, small for gestational age.

INTRODUCTION: Full term small for date newborns are important group of neonates who do not get due attention as they are considered more mature than preterm neonates.SGA describes a neonate whose birth weight or birth crown-heel length is <10th percentile for GA or <2 standard deviations (SD) below the mean for the infant's GA (approximately the 3rd percentile for GA). [1] The incidence of SFD in a given population reflects its socio- economic - development and it can also be used as a good indicator of mother's nutritional status. Being a multi factorial phenomenon many maternal and fetal factors are associated with SFD babies. One major challenge to identifying high-risk neonates is the lack of reliable data on birthweight and gestational age. Birth weight is a single most important marker of adverse

ISSN: 0975-3583, 0976-2833 VOL14, ISSUE 08, 2023

perinatal, neonatal and infantile outcome. Any baby born SFD is more likely to be small. However there are other factors that can also contribute to the risk of SFD. Maternal factors include genetic size; demographic (age at the extremes of reproductive life, race/ethnicity, SES); nulliparity and grand multiparity status; underweight before pregnancy (e.g., malnutrition); uterine anomalies; chronic disease; factors interfering with placental flow and oxygenation (cardiovascular disease, renal disease, hypertension [chronic or pregnancy induced], sickle-cell anemia, pulmonary disease, collagen-vascular disease, diabetes autoimmune diseases, thrombotic disease, postterm delivery, high-altitude environment); exposure to teratogens, including radiation and alcohol; and tobacco or cocaine. [1]Teen mother, Multiple birth, women who are exposed to drugs, alcohol and cigarettes during pregnancy are more likely to have SFD. Mother's of lower socio- economic status are also more likely to have poor pregnancy nutrition inadequate prenatal care, and pregnancy complications - all factors that can contribute to SFD.Hard labourer, poor family atmosphere, decreased birth interval previous history of bad obstetric history and poor pre -pregnancy nutrition also contributes to SFD.[2] Many of these are interrelated . We conducted this study to identify maternal risk factors associated with small for date newborns.

Objective: To identify the maternal factors associated with delivery of the full term small for date infants.

Design: Observational, cross-sectional study.

Setting: Postnatal Ward, Civil Hospital Ahmadabad.

Participants: Out of 1523 total live births, 351 SFD babies were included in the study

Method: All full term SFD inborn babies from month June to August 2013 were included. Birth weight was recorded on pre calibrated electronic weighing scale (ME=2gm). Gestational age was obtained from the recall of the date of last menstrual period if available and modified Ballard scoring done immediately after birth. SFD is defined as birth weight below the 10^{th} percentile for gestational age and sex. Maternal factors including age, parity, education, and socio- economic status, antenatal care, weight gain during pregnancy, birth spacing, hypertension, anemia and nutritional status Information including pregnant mother's general demographic characteristics, and gender was collected by reviewing neonatal and obstetric records with complete information.

Results and discussion:
During the study, there were 1523 babies. Out of that 351 were SGA and 1172 were AGA.

TABLE 1

1	SGA	AGA	TOTAL
2	351	1172	1523

In our study 23.04% were SGA

ISSN: 0975-3583, 0976-2833 VOL14, ISSUE 08, 2023

TABLE: 2 ANEMIA

	ANEMIA	NO ANEMIA	TOTAL
SGA	232	119	351
AGA	525	647	1172
			1523

In our study 66% SGA babies have with maternal anemia.(OR 2.4)

TABLE: 3 MATERNAL AGE IN RELATION To SGA

	<20 & > 34	20 TO 34	
SGA	189	162	351
AGA	663	509	1172

In our study 53.8% babies have mother's have age <20 &>34 and 46.1% babies have mother's age between 20 to 34.(OR- 0.9)[4]

TABLE : 4 ANC VISIT

	ANC NOT TAKEN	ANC TAKEN	
SGA	225	126	351
AGA	520	652	1172

In our study 64.1% babies's mother's have not taken ANC visit and 35% babies's mother's have taken ANC visit.(OR-2.3)

TABLE: 5 MOTHERS PARITY IN RELATION TO SGA

	Multipara	primi	
SGA	260	91	351
AGA	494	678	1172

In our study 74% babies's mother were multipara and 25.9% babies's mother were primi.(OR-2.1)

TABLE: 6 MOTHERS LITERACY IN RELATION TO SGA

	Illiterate	Educated	
SGA	233	118	351
AGA	698	474	1172

In our study 66% mothers were illiterate.(OR-1.3)

TABLE:7 MOTHER'S WEIGHT IN RELATION TO SGA

	<40 KG	>40 KG	
SGA	216	135	351
AGA	566	606	1172

ISSN: 0975-3583, 0976-2833 VOL14, ISSUE 08, 2023

In our study 61.5% mother's weight was <40 kg.(OR- 1.7)

TABLE:8 BIRTH INTERVAL IN RELATION TO SGA

	<2 YEAR	>2 YEAR	
SGA	196	155	351
AGA	608	564	1172

In our study 55% have <2 year birth interval.(OR-1.1)

- **Conclusion**: Maternal factors like maternal malnutrition, inadequate antenatal care, and poor weight gain during pregnancy, short birth interval; low maternal age, education of mothes, multipara mothers, anemic mothers are significant risk factors for small for date infants.[5,6,7]
- It is therefore necessary recommended that steps be taken to improve the nutritional status of mother before and during pregnancy, as well as improve utilization of antenatal services in order to ameliorate risk factors.

References:

1. Manual of neonatal care .
2. Schelp FP, Pongpaew P. Analysis of small for gestational babies and associated factors in a rural and an urban hospital in *J. Trop Pediatr*1985; 31: 5–8.
3. Ghosh S, Bhargava SK, Madhavan S et al. small for gestational babies of North Indian babies. *Pediatrics* 1971; 47: 826–830
4. Lee K, Ferguson RM, Corpuz M et al. Maternal age and incidence o small for gestational age : A population study. *Am J Obstet Gynecol* 1988; 158: 84–89.
5. Kumari S, Shendurnikar N, Jain S et al. Outcomes of low birth weight babies with special reference to some maternal factors. *Indian Pediatr* 1989; 26:
6. Nutrition News. National Institute of Nutrition. Hyderabad 191; 12
7. .Verma RC. Effect of tobacco by mother on fetal outcome. Indian J Pediatr 1983; 20:105-111.
8. Saenger P, Czernichow P, Hughes I, et al. Small for gestational age: short stature and beyond. Endocr Rev 2007;28(2):219-251.