



Perinatal outcome in women with sickle cell disease/trait

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ABSTRACT

• *Objectives: To study the perinatal outcome of pregnant women with sickle cell disease and trait.*

• *Methods: This was a prospective observational study in the Obstetrics and gynecology dept, New Civil Hospital, Surat. Pregnant women with Surname:[Thodia, Dubla, Kokna, Gamit, Chaudhary, Halpati, Vasava, Patel, Nayka, Varni, Kokani, Kathodi, Kolcha, Kotwadia] and all women with anemia attending the Antenatal OPD or admitted to obstetrics ward or labour room were screened for sickle cell anemia. Blood sample of cases that had positive sickling test were subjected to Hb electrophoresis to differentiate SS(SCD) from AS(SCT). 29 SCD and 65 SCT identified and enrolled as subjects in my study. Both group were matched for age, gravidity and other demographic factors. Perinatal outcome as regards birth weight, NICU admission and IUFD was compared in both the groups. Wherever applicable, chisquare test was applied.*

• *Results: Out of 94, sickle cell disease (SS) was found in 29 cases (30.85%) and sickle cell trait (AS) in 65 cases (69.15%). Prematurity was detected in 46.4% of (SS), and 15.6% of (AS). Low birth weight babies born to SS and AS were respectively 39.3% and 18.7%. Incidence of IUFD was 17.85% in (SS) and 3.12% in (AS).*

• *Conclusions: The incidence of preterm deliveries, IUFD and low birth weight babies are significantly high in women with sickle cell disease compared to sickle cell trait*

KEYWORDS : sickle cell disease, sickle cell trait, prematurity, low birth weight Babies.

Introduction: Sickle cell haemoglobinopathies is a common disease in South Gujarat and it is suspected that about 66,845 of sickle cell disease and 8,91,262 of sickle cell trait people reside in tribal area of Gujarat[2]. Sickle cell haemoglobinopathies are one of the commonest autosomal recessive, inheritable diseases characterized by production of abnormal sickle hemoglobin (HbS). The abnormal HbS tends to polymerize on deoxygenation and red blood cells containing HbS become less pliable and consequently deform into characteristic sickle shape, after which the disease is named. A person who inherits an abnormal HbS gene one parent becomes the less harmful carrier state of sickle cell trait (AS). Inheritance of abnormal gene

from both parents results in homozygous state of sickle cell disease (SS).

Sickle cell disease is a multisystem disorder whose clinical manifestations includes chronic hemolysis, repeated infections, growth restriction in addition to an acute life threatening complication called crisis which is associated with considerable morbidity and mortality. Fetal wastage in the form of abortion, stillbirth and neonatal death is very high in SS women. Low birth weight babies were born to SS mothers due to premature deliveries and fetal growth retardation.

The current study attempts to study the perinatal outcome associated with sickle cell disease to enable us to plan an improved fetomaternal care at the periphery with the ultimate aim of improving perinatal outcome in women with sickle cell anemia.

Methodology: This was prospective observational study carried out in the Obstetrics and gynecology dept, New Civil Hospital, Surat from Oct.2012 to June2014.

Method of collection of data:**Inclusion criteria:**

Pregnant women with sickle cell disease or trait.

Exclusion criteria:

Pregnant women with anemia other than sickle cell anemia

Procedure of study:

Pregnant women (Surname: Thodia, Dubla, Kokna, Gamit, Chaudhary, Halpati, Vasava, Patel, Nayka, Varni, Kokani, Kathodi, Kolcha, Kotwadia) and all women with anemia attending the Antenatal OPD or admitted to obstetrics ward or labour room were screened for sickle cell anemia

Blood sample of cases that had positive sickling test were subjected to Hb electrophoresis to differentiate SS(SCD) from AS(SCT).

29 SCD and 65 SCT identified and enrolled as subjects in my study..

Antenatal USG was done routinely in all cases as enrollment to exclude intra uterine fetal growth restriction.

The baseline data of all enrolled subjects was recorded in the proforma. The antenatal management of these subjects was done according to their associated complications. Routine intranatal monitoring and management was done maintaining the hydration and oxygenation of these subjects in addition to antibiotic prophylaxis. The same care was continued in post natal period and these subjects were discharged in 5th postnatal day in absence of any fetomaternal complication.. The detail of anemia, PIH, sickle cell crisis were noted. The mode of delivery presence/absence of any antenatal, intranatal, postnatal complications was noted After delivery, the babies were weighed. Maturity of newborn babies was assessed and Apgar scoring was done. Resuscitation was done in babies with low Apgar. Selected cases were referred to NICU of Govt. MedicalCollege, surat. The newborn babies were followed for five days after the delivery for any neonatal complication.

Observations and discussion:**Table :1. Fetal outcome:**

	SSD(n=28)	SST(n=64)	Comparison between SSD and SST
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Live birth	23(82.14%)	62(96.87%)	
Still birth	5(17.85%)	2(3.12%)	0.016[s]

Table1: Showing fetal outcome of study subjects

Table2. Neonatal complications:

	SSD(n=28)	SST(n=64)	Comparison between SSD and SST
Prematurity	13(46.4%)	10(15.6%)	<0.005[s]
Low birth weight	11(39.3%)	12(18.7%)	0.04[s]
NICU admission	13(46.2%)	14(21.8%)	0.02[s]
Early neonatal death	2(7.1%)	1(1.5%)	0.172[ns]

Table 2: Showing neonatal complication in study subjects

Out of total 7902 cases, the incidence of sickle cell anemia in

the present study was found in 94 cases (1.18%) of

which sickle cell disease (SSD) was 29 cases (30.85%) &

sickle cell trait (SST) was 65 cases (69.15%). The mean

age of pregnant mothers with SSD and SST were

24.93±3.565 and 24.29±4.205 years respectively. The mean

gravida of SSD and SST group of women were 1.58 and 1.96 respectively. The mean parity of SSD and SST mothers were 0.51 and 0.86 respectively. Majority of subjects with SSD had moderate anaemia (48.27%) while majority of subjects with SST had mild anaemia (49.2%). The difference in requirement of blood transfusion and incidence of anemia between subjects with SSD and SST with respect to general population was statistically significant. The vaginal delivery [62%(SSD), 60%(SST)] and caesarean section [27.6%(SSD) and 35.5%(SST)] rates were similar in the SSD,SST groups. But rate of instrumental delivery were more in SSD group [6.3%(SSD), 3%(SST)].

- Table1 shows Stillbirths were noted in 17.24% in SSD group as against only 3% in SST group. The difference in stillbirth rates between SSD group and SST group was statistically significant (p-value <0.016). Similar result was found in previous other study [7.4% SSD and 2% SST in sonwane et al.]
- Table 2 shows 44.82% subjects with SSD had preterm delivery as compared to 15.37% in subjects with SST. Preterm delivery was significantly more common in subjects with SSD than SST [p<0.002]. In women with SSD, preterm deliveries are reported to be 21.6% by Dare et al 3, 20% by Chhabra 4, 23% by Howard5, 21% by
- Neonatal complications like LBW [39.3%(SSD), 18.7%(SST)] and NICU admission [46.2%(SSD), 21.8%(SST)] were significantly high-

er in the SSD group as compared to the SST group. LBW was lower in our study compare to other study [47.2%(SSD), 34.6%(SST) in Zia et al. and 56%(SSD), 34%(SST) in Kale et al.]

Conclusion

- On analysis of the above, it was found that pregnant women with sickle cell disease were more prone to antenatal, intranatal and postnatal complication like anemia, hypertensive disorder, Eclampsia and sickle cell crisis.
- Neonatal complications like prematurity, LBW and NICU admission were significantly higher in the women with sickle cell disease as compared to the women with sickle cell trait.

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