

Comparative study of hypertensive disorder in pregnant women with sickle cell disease and trait



Medical Science

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

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ABSTRACT

Objectives: To compare the incidence of hypertensive disorder in 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. The antenatal management of these subjects was done according to their associated complications. Routine intranatal monitoring and management was done. 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, PET, chronic hypertension and Eclampsia, sickle cell crisis were noted.

Results: Out of 94, sickle cell disease (SS) was found in 29 cases (30.85%) and sickle cell trait (AS) in 65cases (69.15%). Incidence of hypertension (PIH / chronic hypertension) in SSD group was 44% and in SST group was 26%. Incidence of Eclampsia in both group respectively was 27.58%(SSD) and 4.61%(SST).

Conclusions: Subjects with SSD were more likely to have Eclampsia and Hypertensive disorder as compared to those with SST.

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^[1]. 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 attempt to study hypertensive disorder in pregnant women with sickle cell disease to enable us to plan an improved fetomaternal care at the periphery with the ultimate aim of improving pregnancy 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 in 2013.

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, chronic hypertension, PIH, PET, sickle cell crisis were noted. The mode of delivery presence/absence of any antenatal, intranatal, postnatal complications was noted.

Observations and discussion:

Table :1. Hypertension:

	SSD [n=29]	SST [n=65]	Comparison between SSD and SST
PIH/Chronic hypertension	13 [44%]	17 [26%]	0.048[s]
Eclampsia	8[27.58%]	3 [4.61%]	0.03[s]

Table 1: distribution of study subjects according to the incidence of hypertension

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 anemia (48.27%) while majority of subjects with SST had mild anemia (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 comparatively similar in the SSD, SST groups. But rate of instrumental delivery were more in SSD group [6.3%(SSD), 3%(SST)].

Table 1 shows Subjects with SSD were more likely to have Eclampsia as compared to those with SST [27.8% in SSD and 4.61% in SST]. (p value: 0.03). Incidence of Eclampsia was more in SSD group than in SST group in our study while Sonwane et al reported similar incidence in both groups. [4% in SSD and 4.3% in SST]

Subjects with SSD were more likely to have Hypertensive disorder of pregnancy as compared to those with SST [44% in SSD and 26% in SST]. (p value: 0.048).

Conclusion

On analysis of the above, it was found that pregnant women with sickle cell disease were more prone to antenatal, intra natal and postnatal complication like anemia, hypertensive disorder, Eclampsia than pregnant women with sickle cell trait.

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