Original Research Paper

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SOCIO-DEMOGRAPHIC PROFILE OF SICKLE CELL DISEASE PATIENTS DIAGNOSED AT A TERTIARY CARE HOSPITAL IN CHANDRAPUR DISTRICT.

Biochemistry

KEYWORDS: Sickle Cell Disease , Low Birth Weight (LBW), Socio-demographic profile

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ABSTRACT

The objective of the study was to study the socio-demographic profile of Sickle Cell Disease patients diagnosed at a Tertiary Care Hospital in Chandrapur district, Maharashtra. It was a descriptive retrospective record based study. The data from January 2016 to September 2016 for a period of 9 months was analyzed. There were 56 patients with confirmed diagnosis of Sickle Cell Disease by electrophoresis during the study period. The data on age, gender, residence, community, marital status was extracted and analyzed. Out of 56 diagnosed patients 30(54%) were males and 26(46%) females. Occurrence of SS pattern was more in age group 1-5 years 19(33.9%) followed by 21-25 years 10(17.9%).Almost 28(50%) were from Chandrapur block followed by Rajura 6(10.7%) and Ballarpur 5(8.9%).Only 12 of them were married and their spouses counseled and checked for sickel cell hemoglobinopathies. All the spouses were having AA pattern. Half of the patients 30(53%) belonged to SC community followed by 16(29%) ST and OBC 16(29%).

INTRODUCTION

Nearly 20 million people suffer from sickle cell anemia in India. The sickle cell gene in India was first described among tribal groups in South India[1,2] but is now recognized to be widespread, especially in Central India, where the prevalence in different castes and communities varies between 9.4-22.2%[1,3]. Sickle cell disease is responsible for considerable morbidity and mortality[4,5]. It is one of the most common hereditary diseases occurring worldwide, which may affect any organ or system of human body. It is irreversible, untreatable health problem, predominantly seen amongst various tribes. With its present rate of spread, in another 25-40 years, over 150 lakh children will suffer and die of sickle cell disease, and over 300 lakh persons will inherit the abnormal hemoglobin trait[4,6]. Sickle cell trait was also found in tribes of western India in Nagpur and its surrounding areas[4,7]. Shukla et al. (1958)[4,8] were the first to report the sickle cell disease in Vidarbha region of Maharashtra with prevalence from 9.4 to 22.2 percent in non-tribal population. So, this study was undertaken to study the socio-demographic profile of Sickle Cell Disease patients diagnosed at a Tertiary Care Hospital in Chandrapur district in Vidarbha.

METHODOLOGY

The study was a descriptive –retrospective record based study carried in Government Medical College and Hospital, Chandrapur, Maharshtra. The data between January 2016 to September 2016 (9 months) was analyzed. After obtaining permission of Head of the Institute data on total solubility tests done at OPD,IPD and ANC clinic in hospital was extracted. Data regarding those subjected to Hemoglobin electrophoresis was analysed. The line listing of patients found positive in electrophoresis SS pattern was maintained and their sociodemographic data like age, gender, residence, community, marital status was sought and analyzed using excel spread sheet.

RESULTS

Analysis of records revealed that total number of solubility tests done in Government Medical College and Hospital, Chandrapur ie OPD,IPD,ANC clinic during January 2016 to September 2016 was 10617.Of these 875 came out to be positive. On Hemoglobin electrophoresis 56 were diagnosed to have SS pattern. Out of 56 diagnosed patients 30(54%) were males and 26(46%) females.

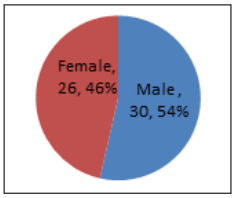

Fig.1:Genderwise distribution of study subjects (Sickel cell diseased) n=56

Occurrence of SS pattern was more in age group 1-5 years 19(33.9%) followed by 21-25 years 10(17.9%).

Table.1: Age distribution of patients of sickle cell disease

Age	Number	Percentage
1-5 years	19	33.9
6-10 years	9	16.1
11-15 years	4	7.1
16-20 years	5	8.9
21-25 years	10	17.9
26-30 years	4	7.1
31-35 years	1	1.8
36-40 years	1	1.8
41-45 years	2	3.6
46-50 years	0	0.0
51-55 years	1	1.8
Total	56	100.0

Almost 28(50%) were from Chandrapur block followed by Rajura 6(10.7%) and Ballarpur 5(8.9%).

Table.2: Distribution of patients of sickle cell disease according to residence

Block	Number	Percentage
Chandrapur	28	50.0
Jiwati	2	3.6
Korpana	2	3.6
Sawali	1	1.8
Mul	1	1.8
Rajura	6	10.7
Sindewahi	2	3.6
Brahmapuri	1	1.8
Warora	1	1.8
Gondpipri	3	5.4
Chimur	4	7.1
Ballarpur	5	8.9
Total	56	100.0

Half of the patients 30(53%) belonged to SC community followed by 16(29%) ST and OBC 16(29%).

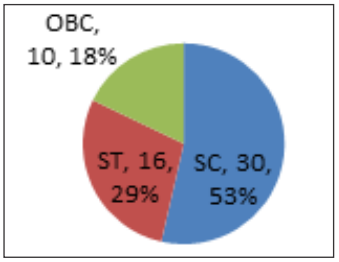

Fig 2:Communitywise distribution of study subjects (Sickel cell diseased)n=56

Only 12 of them were married and their spouses counseled and checked for sickel cell hemoglobinopathies. All the spouses were having AA pattern.

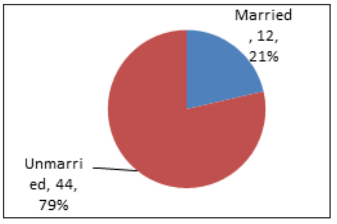

Fig 3:Marital status of study subjects (Sickel cell diseased) n=56

DISCUSSION:

In Maharashtra Bankar et al. (1984)[4,9] reported prevalence of the disease from 1.9 percent to 33.5 % in different communities. Lelkin *et al*., (1989)[4,10] found that the patients of sickle cell disease were distributed more in higher age groups. Ankushe (1993)[4,11] reported prevalence of 5.6 percent of SCD from few villages of Wardha District.

Kamble M *et al*., (2000)[5] carried out the prospective descriptive hospital based study on 1753 patients admitted in paediatric ward at Mahatma Gandhi Institute of Medical Sciences, Sewagram Wardha. Of these 1753 patients, 61 (61.6%) had Hb S homozygous state whereas 38 (38.4%) had heterozygous state. Of these, only 6 homozygous cases and 8 heterozygous cases were below the age of 12 months.In this study almost 50% homozygous cases were <10 years. SCD was more common in males. The male: female ratio being 1.65: 1 in Hb SS and 1.71: 1 in Hb AS cases.This male :female ratio was 1:1 in present study.

Kate (2000; 2001) [4,12,13] reported that prevalence of sickle cell disorder is very high among tribal population groups, Bhil and Pawara from Nandurbar district and amongst the Madia, Pardhan, Oktar population from Gadchiroli district (Maharashtra) i.e. 20%. Of which Oktar group having 35% prevalence of SCD. The overall prevalence among tribal population is about 10% for the carrier state and 0.5% for sufferers.Kate (2002)[4,14] also reported that sickle cell gene is widely spread in all district of Eastern Maharashtra i.e. Vidarbha, North Maharashtra i.e. Satpuda ranges and some parts of Marathwada region In the study conducted by Deshmukh (2006) in rural area of Wardha District, Out of 1676 patients, 155 were sickling positive (9.2%). Of these 0.83% (14) had homozygous state (Hb SS) whereas 8.4% (144) had heterozygous state (carrier, Hb AS) diagnosed by hemoglobin electrophoresis. Sickle cell anemia was more common in males, the male: female ratio being 3.6:1 in sickle cell disease patients and 1.38:1 in carriers (Hb AS).The prevalence was maximum in Matang (15.8%) followed by pardhan (10.6%) and Gowari (5.8%). The prevalence in Bouddha, Kunbi and Teli was found to be 4.6% , 2.7% and 2.6 % respectively [4,15].In a study done by Umesh 2011, out of 294 subjects 36.7% were having one or more sickness problem and 14.2 % joint pain morbidity. The overall prevalence of sickle cell anemia was found to be18.3 % in different rural areas of Chandrapur district of Maharashtra [4,16]. In study done in tribal school of Belda, District-Nagpur, Gunjal (2012) observed that Sickle Cell Disorder was present in 6.28% of study subjects (7.99% in boys and 2.20% in girls) [4,17]. Urade (2012)[4,18] in study conducted in Vidarbha where l6463 subjects were screened out of which 374 (5.78 %) found positive for HbS.

Most of the studies from Maharashtra show that the prevalence of Hb S is more common in Schedule Caste followed by Scheduled Tribes population. Scheduled Caste mainly consists of Mahar [now termed as Bouddha], Matang and Chambhar. Scheduled tribes consist of Bhil, Pardhan, Andha, Mahadeo koli, Pawara etc[4] S.L.Kate (2000)[4,12].According to the studies by Lele et al (1962)[4,19], Shukla R.N.et al (1958)[8], Kamble et al (2000)[5], Hb S prevalence was more common in Mahar community. In present study also half of the patients 30(53%) belonged to SC community followed by 16(29%) ST and OBC 16(29%). It is to be noted that this study was analysis of records from a tertiary care hospital, which cannot be regarded to represent population surveys, as samples studied were heterogeneous. Therefore it was rather difficult to study the relationship of abnormal haemoglobins with different factors.

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