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Survey of sickle cell anemia at Satgaon Bhusari Maharashtra India

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Abstract
Sickle cell anemia is the most common form of sickle cell disease (SCD) SCD is a serious disorder in which the body makes sickle-shaped red blood cells. "sickle-shaped" means that the red blood cells are shaped like a crescent.
Normal red blood cells are disc-shaped and look doughnuts without holes in the center. They move easily through your blood vessels. Red blood cells contain an iron-rich protein called hemoglobin. This protein carries oxygen from the lungs to the rest of the body. The aim of study to carry out to assess the sickle cell anemia and morbidity pattern in village at Satgaon Bhusari, Chikhali tahsil of Buldana district in Maharashtra, India. The subjects were screened by solubility test.
The present study is community based cross sectional study conducted on date 12 march 2018 at village Satgaon Bhusari, tehsil Chikhali of Buldana district in Maharashtra. All 25 participating individuals were 1 - 30 years of age. By arranging screening camps village Satgaon Bhusari at places primary school, sub primary health center the investigation was conduct by contact & screen each and every 1 to 30 year age group population by doing solubility test. Detailed history of each individual was recorded with age, sex, cast, smoking habit, food habit, family history and morbidity status etc.
The population was screened by solubility test.

Keywords: genetic disorder, abnormal RBC's, haemoglobin, anemia

Introduction
Sickle cell anemia is a genetic disorder which causes the expression of defective hemoglobin resulting irregularly shaped red blood cells, known as "sickle cells." These sickle cells cause problems in the body, often blocking blood flow and causing painful attacks and sometimes stroke. Sickled cells have different biochemistry than normal red blood cells and are controlled by many free radical processes.
Patients with sickle cell disease experience both chronic and episodic pain and have a reduced quality of life [7]. Painful crisis is the most common reason for emergency department use by patients with sickle cell disease [8]. The pathophysiology of a painful crisis is not entirely clear, and its determinants are uncertain. Some patients have frequent crises and severe disability, whereas others are able to lead relatively normal lives. Much of what we have learned about the incidence of complications in people with sickle cell disease comes from the Cooperative Study of Sickle Cell Disease (CSSCD)

Material and Methods
The present study is community based cross sectional study conducted on date 12 March 2018 at village Satgaon Bhusari, Tehsil Chiklli of Buldana district in Maharashtra. All 25 participating individuals were 1 - 30 years of age. By arranging screening camps village at Satgaon Bhusari at places primary school, sub primary health center the investigation was conduct by contact & screen each and every 1 to 30 year age group population by doing solubility test. Detailed history of each individual was recorded with age, sex, cast, smoking habit, food habit, family history and morbidity status etc.
The population was screened by solubility test.

Solubility test procedure
One ml of phosphate buffer reagent was taken in a glass tube and a small quantity of sodium dithionite was added to it and was mixed well to dissolve.

A small drop of washed red cells was added and was mixed well to produce light pinkish violet colour. The test was read after 3 to 5 min. It was read as positive, if the turbidity impaired the visibility of dark, bold lines on a white paper held against bright source of light at one inch distance. Negative test was indicated by visible lines. The sickle cell solubility test is a simple method that detects the presence of sickle hemoglobin, but does not distinguish between sickle cell trait and sickle cell disorders.

Sr. No.	Turbidity	Clarity	Visibility of line through the tubes	Interpretations
01	No	Yes	Yes	Normal
02	Yes	No	No	Sickle cell

Observation Table

Sr. No.	Name of patients	Gender	Age	caste	Marital status	Result
01	Kunti Ashok Lokhande	F	24	Maratha	Married	-ve
02	Manish Dilip Hiwale	M	18	Mahar	Single	-ve
03	Ashwini Gajanan Ingle	F	15	Buddha	Single	-ve
04	Pooja Dilip Hiwale	F	14	Mahar	Single	+ve
05	Babita Kisan Jadhav	F	15	Maratha	Single	-ve
06	Ajay Kaduba Mane	M	14	Mahar	Single	+ve
07	Akhash Dilip Khandare	M	16	Mahar	Single	-ve
08	Suraj Santosh Gawai	M	17	Mahar	Single	-ve
09	Gopal Ramdas Jadhav	M	14	Mahar	Single	-ve
10	Archana Shivaji Katkar	F	22	Kunbi	Married	+ve
11	Yash Shivaji Katkar	M	3	Bhil	Single	-ve
12	Rekha Sanjay Pathe	F	ZJ	Chambhar	Married	-ve
13	Jija Brmhanand Gawai	F	27	Buddha	Married	-ve
14	Ganesh Pralhad Pawar	M	15	Maratha	Single	-ve
15	Sandip Voman Jadhav	M	24	Buddha	Single	-ve
16	Vilas Ramesh More	M	25	Buddha	Married	-ve
17	Varsha Rajkishir Kankal	F	26	Buddha	Married	+ve
18	Santosh Himmatrao Jadhao	M	22.	Buddha	Single	+ve
19	Shubhangi Suresh Rindhe	F	17	Maratha	Single	-ve
20	Surekha Ramesh Jadhao	F	27	Buddha	Married	-ve
21	Vimal Sanjay Khandare	F	29	Buddha	Married	-ve
22	Archana Shivaji Gadge	F	26	Maratha	Married	-ve
23	Meera Babulal Pathe	F	26	Chambhar	Married	-ve
24	Vlukta Gajanan Bhusari	F	17	Kunbi	Single	-ve

Result

During the study period of two months total persons are observed undertake camp. The local status also analyzed through seasonal data. The patients observed under the camp during the study are listed above.

Conclusion

Sickle cell anemia is a genetic disorder which causes the expression of defective hemoglobin resulting irregularly shaped red blood cells. This sickle cell blocking blood flow, causing painful attacks.

In the study, the solubility test was used as screening test, as it is easy to carried out in the field setting and rapid method.

The study shows that most of the cases are in the age group of below 30 years. Out of total only 10 to 15% persons where observed as a sickle cell carrier i.e. the cases of sickle cell a given areas are very rare.

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