



MANAGEMENT OF ANEMIA

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ABSTRACT

Anaemia is the most common blood disorder in children, especially of poor socioeconomic group. Anaemia is defined as the reduction in the number and quality of circulating red blood cells when the haemoglobin content is below the normal level for particular age, resulting in decreased oxygen carrying capacity. A 13 year old female patient, Chaya Baghel, came with a complain of progressive paleness of body from 2 months, loose motion, vomiting, fever and swelling over legs from 8-10 days. The patient underwent basic blood tests to rule out the causes and was treated with an exchange transfusion and a blood transfusion. There was significant improvement in the case of Anaemia and was discharged on the advice of follow up.

Key Words: Anaemia, Adolescents, Haemoglobin

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INTRODUCTION

Blood formation, in humans begins at the fourth week of gestation. During the first six months of the foetal life, liver produces majority of the blood cells and at times bone marrow carries on this function. During period of growth, all the bone marrow produces blood cells, but afterwards haematopoiesis is limited to the epiphysis vertebrae and certain flat bones [1]. Anaemia refers to a decreased number of circulating red blood cells. It is most common blood disorder in general population. Anaemia currently affects an estimated 1.62 Billion people globally [2].

The treatment of anaemic cases varies greatly, depending on the diagnosis and includes supplying the missing nutrients in the deficiency anaemics, destructing and removing the toxic factors, improving the underlying disorders with drugs and other form of therapy, decreasing the extent of blood destruction by methods that include surgery (eg. Splenectomy) or restoring blood volume with transfusion [3].

Patient Information

Informant: Mother

A female patient was admitted to All India Institute of Medical Sciences (AIIMS), Raipur,

Chhattisgarh, India on 24th November, 2017 at 5 PM, by her parents with the following complaints:

- Progressive paleness of body from 2 months
- Loose motion from 3 days (Also had it 2 months ago)
- Vomiting from 4-5 days (Also had it 2 months ago)
- Fever since 15 days (Also had it 2 months ago)
- Fever since 15 days (Also had it a month ago)
- Swelling over legs since 8-10 days

As per the patient's mother, patient was apparently alright 2 months back, then she had complained of loose motion which was watery in nature, 10-15 episodes a day, not associated with blood in it, yellowish to greenish in colours. This was associated with vomiting 2-3 times per day, non-projectile, non-bilious, containing feeds. This was followed by dullness and increased paleness for which patient was admitted at local hospital and received symptomatic treatment and was admitted for 1 day but symptoms were not relieved.

The Patient developed fever 1 month back (for 1st time) which was mild to moderate grade, not associated with chills or rigorous, achieved by taking oral medications (undocumented) developed swelling all over



body from last 8-10 days which started from face and progressed all over the body (Received oral frusemide from local practioners)

No History of abdominal pain, Headache, bleeding manifestation, blood in stool, blood in urine and seizure.

Menstrual History

Attained menarche at the age of 11 years; Regular for 3-4 days

But no cycle since last 2 months.

Date and time of admission: 24th November, 2017 5PM

MR ID: 2017007608

IP No. : 20176456

Consulting Doctor: Dr.Atul Jindal

Clinical Findings

On examination, patient was conscious, irritable but oriented.

Vitals: Afebrile, Pulse Rate – 112/minute

Respiratory Rate – 40/minute

Blood Pressure – 111/58 mm of HG

SPO2 – 100% with O2via nasal prongs at 2litre per minute

On systemic physical examination, No abnormality was found per abdomen and CNF.

CVS: S1, S2 with gallop rhythm, CCF

Chest: Bilateral decreased air entry

Table 1. The patient was diagnosed with Anaemia with CCF

Test	Result	Biological Reference
Complete Blood Count		
RBC	0.89 Million per/ μ litre	3.80 to 4.80
Haemoglobin	2.00 gm/DL	12.00-15.00
Packed Cell Volume	6.8%	36-46%
Mean Cell Volume	77 fL	83-101
Total Leucocyte Count	16.10 ($10^3/ \mu$ litre)	4-10 ($10^3/ \mu$ litre)
Lymphocyte	25 %	20-45
Monocyte	5%	2-10%
Eosinophils	2%	1-6%
Basophils	0%	0-2%

Therapeutic Interventions

After Clinical findings of complete blood count, blood grouping (O+ve) an exchange transfusion of 250 ml blood was done slowly over 120 minutes, under aseptic technique and 300ml of PRBC was transfused over 4 hours with 3ml Injection Lasix IV mid transfusion of blood.

Child had mild icterus on day 2 of admission and LFT raised total and indirect bilirubin. So, a possibility of auto immune haemolytic anaemia was suspected. But, coombs test came negative.

Other investigations ruled out, nutritional anaemia. So,

➤ Iron and folic acid tablets – 100 mg OD was stated and

➤ Syrup POTKLOR – 5ml TDS

➤ Injection Vitamin B12, IM STAT

Lab investigation after the above treatment resulted in the raise of Haemoglobin level to 7 mg/DL.

Follow Ups and Outcomes

Assessment was done properly every day. Patient had a marked improvement, and edema subsided. Patient and parents were satisfied with the care taken by the medical and nursing management. The patient was discharged on the medication advice to continue - *Iron and folic acid tablets – 100 mg OD* for 3 months and *Tablet Multi-vitamin*, one Tablet OD for two weeks. The patient was counselled by dietician, and was advised about

the steps to improve the intake of nutritious food suitable to the economic conditions and dietary patterns of the patient. The patient was advised to come back after 15 days of discharge for a follow up on the improvement in patient’s health.

DISCUSSION

Anemia caused by lack of Iron or Iron Deficiency is a problem of both national & global concern^[4]. In India, it is estimated that about 56% of the Adolescent girls are prone to Anemia, which means at any given point of time about 6.40 Crore adolescent girls are suffering from Anemia^[5]. This case is clearly one among those cases, where anemia was caused due to deficiency of iron. Conducting requisite tests on the patient, based on the inputs provided by the informants is a prerequisite to diagnose the cause and give appropriate treatment and get back the patient’s health on track by providing medications and advising proper care of hygiene, healthy lifestyle, diet patterns etc. and creating a sense of awareness among the patient’s family by providing all the information and symptoms of anaemia so that, similar cases don’t occur in their immediate family. Since the Blood test was done and results helped the medical staff in understanding the cause and focus the treatment on corrective steps of the deficient haemoglobin in the patient. Such corrective actions by way of medication were sufficient in this case, while it could have



been different in other cases as each case is different from the other.

CONCLUSION

The commonest causes of anemia in developing countries, particularly among the most vulnerable groups (pregnant women and preschool age children), are nutritional disorders and infections [6] Anaemia could be the generally suspected diagnosis, as the occurrence of the same is very frequent and common among the population. But, proper diagnosis is a prerequisite and has to be mandatorily complied with before arriving at the conclusion about the existence of anaemia. Also, once the diagnosis is done, proper medical care and attention is need to ensure that the therapeutic interventions are directed so as to get the health condition of the patient on the track at the earliest and appropriate measures are taken and monitored by the medical staff.

In developing countries parasitic infections and other infectious diseases are more common which peak the requirements of iron in the human body ^[7]. Awareness of the diseases like Anaemia should be created by educating the parents/public at large should be done by explaining the symptoms, major causes and how these can be countered, play an important role in combating this disease. Such an widespread awareness even helps in early

diagnosis and thereby bring the situation under control without causing major damage to the patient physically, mentally, and economically not just for the patient but for their entire family.

STATEMENT OF HUMAN AND ANIMAL RIGHTS

All procedures performed in human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

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Conflict of interest

No interest

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