

# Anaemia in Adolescents

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Anaemia is still omnipresent in India. Adolescent girls are more likely to be a victim, due to various reasons. In a family with limited resources, the girl child in a family is more likely to be neglected. The male child is looked upon as potential breadwinner and provider for the parents in their old age. The girl child, in this situation of weird priorities, is deprived of good food and education and is utilized as an extra working hand, under the guise that when she gets married, she will be required to carry out all the household chores; let her get used to them. Of course, the added burden of menstrual blood loss, normal or abnormal, precipitates the crisis too often. Again, increased vulnerability to infections due to malnutrition is always to be kept in mind. Though the population age group is to be considered as fit, these additional factors compromise the ability of the girls to cope with additional physiological loads due to onset and continuation of menstruation.

## Clinical Diagnosis :

A clinical diagnosis of anaemia *per se* can be made on examination, as pallor of tongue and sclera. It can also be a part of primary causative or associated disease, like history of excess menstrual bleeding, acute haemorrhages, chronic diseases, etc. After noticing the pallor, it is essential to look for other signs, indicative of causative factors, associated factors and consequences of anaemia.

The patient may be completely asymptomatic. To start with, a thorough clinical history may show debility. This will, in a non-acute-bleeder be of long term nature. It may be associated with breathlessness, giddiness, and may also show more susceptibility to *nosocomial* infections. Complaints of acute abdominal pain could indicate an ectopic pregnancy, cough and urinary complaints could indicate chronic infections of these systems. History of amenorrhoea must be elucidated to

detect pregnancy, keeping in mind that anaemia can cause amenorrhoea.

A thorough clinical examination will reveal the extent of anaemia. A patient with acute shock, associated with anaemia needs to be treated on a war footing, and transfusion must go along with treatment of cause. Presence of congestive cardiac failure also warrants immediate different line of treatment.

By far, the commonest factors that one has to take note of, are : menorrhagia, nutrition and chronic infections.

## Investigations:

The basic investigations in a case of anaemia are: A thorough haemogram, with proper evaluation of peripheral smear, complete urine examination and an x-ray of chest (in a non-pregnant patient). The haemogram tells us about the extent of anaemia, state of bone marrow, type of anaemia, platelet factors and parasites. A urine examination tells us about infections, chronic renal pathologies, and some essential systemic diseases. A plain X-ray of chest is very essential in Indian scenario, to detect presence of pulmonary tuberculosis.

With these investigations, one can start treatment of anaemia by ruling out common complicating factors, and replacement of deficiencies. In practice, when haemoglobin is less than 9 gms/dl, when anaemia refuses to respond to replacement therapy, and when other complicating factors are present, one has to go for more investigations. However, under these circumstances, a gynaecologist is not adequately trained or experienced to manage this patient, and the help of a physician, or still better, a relevant subspecialist, like haematologist, nephrologist, etc. should be sought.

Ultrasonography, as every gynaecologist knows, has become a nearly baseline investigation, especially when one avoids internal examination in these patients.

#### Normal Values:

Haemoglobin	12-15 gms/dl
Red Blood Cells	4.2-5.5 million/c.mm.
Colour Index	0.85 - 1.1
Mean Cell Diameter	6.9 - 7.7 $\mu$
Packed Cell Volume	37.47%
Mean Cell Volume	78-94 c. $\mu$
Mean Corpuscular	
Haemoglobin Concentration	32-38%
Reticuloocytes	1 per 100 red cells
White Blood Cells	8,000 - 12,000 / cmm
Neutrophils	33-75%
Lymphocytes	15-60%
Eosinophils	<6%
Basophils	<2%
Monocytes	<10%

#### Causes of anaemia:

These can be classified, very broadly, as due to (1) Bleeding, (2) Defective generation, and (3) Excess breakdown, of red blood cells. Haemorrhage of

menorrhagia could be the commonest cause for which the gynaecologist will see a patient. Assessment of patient's complaints is very important and subjective factors have to be weighed carefully. Other haemorrhages such as haematuria, haemoptysis, haematemesis or a ruptured ectopic pregnancy have to be kept in mind. It could be a bleeding, associated with pregnancy, like induced, threatened or incomplete abortion. Vaginal trauma and hookworms also need to be excluded. A bleeding peptic ulcer, and cervical neoplasia are uncommon. Abnormal bleeding episodes are seen in purpuras, liver disorders and hereditary telangiectasis. When a patient is anaemic, but there is no bleeding, the causes could be in less formation or excessive destruction of red cells. Dietary deficiency of iron, vitamins, proteins and calories are famous for giving rise to anaemia. Acute infections, like septicemia and subacute bacterial endocarditis are known causes of anaemia, but commoner are tuberculosis, malaria, focal sepsis and renal diseases. Rarer causes include carcinomatosis, aplastic anaemia, leukaemias, sickle cell disease, etc.

In conclusion, I would like to emphasize that early detection of anaemia in adolescent girls, and an accent on their proper nutrition is still a farfetched objective. However, with improvement in social factors and education, this goal will become easier.