Prevalence of Nutritional Anaemia among patients reporting to Saveetha Dental College:
A SHORT STUDY.

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Abstract
Nutritional anaemia affects all the age groups and sex in developing countries like India. Iron deficiency is the most common micronutrient deficiency in the world affecting more than 2 billion people. In the present study, 50 patients were selected who were subjected to routine hemogram and were diagnosed anaemic. 2 ml of venous blood was drawn and analysed using autoanalyser method and were interpreted according to the WHO criteria. The study showed that 13 % of the patients were mildly anaemic, 34% were moderately anaemic and 03% were severely anaemic. Various factors like social, economic status, age, sex, social class, dietary habits are some of the major etiological factors for nutritional anaemia.

Aims & Objectives:-

Aim:-
To study the prevalence of nutritional anaemia among the patients.

Objectives:-
Measuring the incidence of anaemia among the selected patients using hemoglobin percentage as cut off value provided by WHO.
To find out correlation between dietary habits and prevalence of anaemia.

Introduction:-
Nutritional anaemia is a worldwide problem with the highest prevalence in the developing countries. It frequently occurs due to inadequate iron intake, chronic blood loss or disease, malabsorption or a combination of these factors. Nutritional anaemia is prevalent all over the world with an estimated 2 billion people being iron deficient and is one of the most common nutritional disorders in the developing world. With an average prevalence of 40% among the general population that it affects nearly two third of pregnant and one half of non pregnant women which is three to four times higher than that in the developed countries, where prevalence of anaemia is between 4-12% among women of child bearing age (WHO/UNICEF 2001 ). Iron deficiency can arise either due to inadequate intake or poor bioavailability of dietary iron or due to excessive losses of iron from the body. Although most habitual diets contain adequate amounts of iron only a small amount (less than 5 %) is absorbed. This poor bioavailability is considered to be a major reason for the widespread iron deficiency. Women lose a considerable amount of iron especially during menstruation. Most commonly, people will anaemia report feelings of weakness, fatigue, general malaise and sometimes poor concentration and dysnoea on exertion.
In India, recent data from the District Nutrition Project (ICMR) in 16 districts and 11 states on prevalence of anaemia in non-pregnant adolescent girls (11-18 years) showed rates as high as 90.1% with severe anaemia (Hb≤7gm/dl) in 7.1% (Teoteja G.S, Singh P, 2002).

By far, the most frequent cause of nutritional anaemia is iron deficiency and less frequently folate or Vitamin B12 deficiency.

**Materials & Methods:**
A cross-sectional study was done among patients reporting to the institute. The age group of the patients were from 18-65 years.

A total of 50 patients were taken. Study procedure was explained to the patient and a written informed consent was taken. All the patients’ demographic details, habit history, dietary patterns etc., were collected in a structured questionnaire. A detailed clinical history taken from them for any present symptom regarding anaemia and physical examination was done to look for anaemic signs and symptoms and the same was noted in the proforma. The data and privacy of the patients were protected. 2 ml venous blood was obtained and the blood hemoglobin was estimated using the autoanalyser method and interpreted as per WHO criteria. Anaemia is established if the hemoglobin is below the cut-off points as recommended by WHO.

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>HB (gm/dl)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-anaemic</td>
<td>≥13 (males); ≥12 (females)</td>
</tr>
<tr>
<td>Grade 1 (mild) anaemia</td>
<td>10.0-11.9</td>
</tr>
<tr>
<td>Grade 2 (moderate) anaemia</td>
<td>7.0-9.9</td>
</tr>
<tr>
<td>Grade 3 (severe) anaemia</td>
<td>≤7</td>
</tr>
</tbody>
</table>

**Results:**
In the present study anaemia was observed in all the patients.

![Figure 1](image1.png)

**Figure 1:** Sex wise distribution of anaemia among patients.

<table>
<thead>
<tr>
<th>MALES</th>
<th>FEMALES</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>03(6%)</td>
<td>47(94%)</td>
<td>50(100%)</td>
</tr>
</tbody>
</table>

![Figure 2](image2.png)

**Figure 2:** Sex wise grading of severity of anaemia (WHO Criteria).
<table>
<thead>
<tr>
<th>GRADING</th>
<th>MALES</th>
<th>FEMALES</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>MILD</td>
<td>1(1%)</td>
<td>12(12%)</td>
<td>13%</td>
</tr>
<tr>
<td>MODERATE</td>
<td>2(2%)</td>
<td>34(34%)</td>
<td>34%</td>
</tr>
<tr>
<td>SEVERE</td>
<td>0(0%)</td>
<td>03(3%)</td>
<td>03%</td>
</tr>
</tbody>
</table>

**Figure 3: Dietary Pattern Of Patients:**

<table>
<thead>
<tr>
<th>DIET PATTERN OF PATIENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>VEGETARIAN DIET</td>
</tr>
<tr>
<td>MIXED DIET</td>
</tr>
</tbody>
</table>
Discussion:
Nutritional anaemia is a major health threat to the developing countries. Interventions like iron and folic acid supplementation and other strategies such as diet modification, infection control, nutrition education must be undertaken.

Iron deficiency can be caused due to either inadequate intake, poor bioavailability of dietary iron or due to excessive loss of iron from the body.

Nutritional anemia especially iron deficiency anemia is more prevalent among women in the adolescent and reproductive age group due to menstrual blood loss, poor diet, bleeding during parturition etc., Patients must be monitored periodically, iron supplements and diet counseling should be given. In this study there is no significant correlation between the diet pattern of the patient and anaemia.

Conclusion:
Nutritional anaemia especially iron deficiency anaemia is more prevalent among females especially adolescent girls due to causes like menstrual blood loss, poor diet and under nutrition as compared to males. Nutritional anaemia is easily preventable as well as treatable and the available measures are relatively affordable. Iron supplementation is required for this group of patients, periodical screening, health checkups and routine hemograms must be performed. The patients should be motivated and educated about the importance of a balanced diet, nutritional supplements. If anaemia is severe, high doses of iron or blood transfusion may be necessary.

Further studies with large sample size are required to estimate the exact prevalence of nutritional anaemia in the target population so that appropriate preventive and treatment measures can be initiated.

References:

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53. Sultan AH. Anemia among female college students attending the university of Sharjah, UAE; Prevalence and classification J Egypt Public Health Association (2007)