

A CASE STUDY OF HUMAN ANAEMIA IN DIFFERENT AGE GROUPS FROM UJJAIN INDIA (M.P)

MANJU JUNWAL, JAYSHREE JATWA

Abstract: Anaemia a common blood disorder; characterized by abnormal reduction in red blood cell count, hemoglobin and/or hematocrit values below the normal reference values .Anemia is global public health problem affecting both male and female . The objective of the present study is the percentage of anemia in males & females and which group was more affected by Aneamia

The present study was conducted at ss Hospital chl Apollo and R.D. Gardi medical Hospital.

Details regarding age, gender, clinical presentation ,clinical examination findings, blood investigations, and outcome were recorded. Among the selected patients 73% were female anemic patients and 26% were male anemic patients.

Keywords: hemoglobin, Aneamia, Ujjain.

Introduction: Anaemia is a nutritional deficiency in the world known as a major “**Public Health Problem**” throughout the globe, especially in the developing and non developing countries with a major consequence for human health. [1], [2]. [3] [4]. Anaemia is a clinical condition in which the red blood cells count and hemoglobin (Hb) content is less than normal, generally different in males and females. For men Anaemia is typically defined as hemoglobin level less than 12 gram /100ml blood and in women hemoglobin level less than 11 grams/100 ml blood. “English physician “Thomas Addison “(1793-1860) gave the first complete description of the disease– “a remarkable form of general Anaemia” in 1849.

Two main causes of Anaemia are i. a decrease in production of R.B.Cs or Hb and ii.a loss or destruction of R.B.Cs, abnormally

Some important “symptoms” are: weakness fatigue skin paleness, shortness of breath, fast irregular heartbeat, low blood pressure, headache, and poor memory difficulty in thinking, cold hands and feet.

Material and Methods: The present study was conducted at ss hospital chl applo and R.D.Gaardi Medical College.

Experiment was done by taking blood from patients for estimating Hb.and R.B..cs. •Hemoglobin was measured by C.B.C.method.

Sample preparation: Blood samples were collected by finger stick. The finger end lightly pressed using a rocking motion to stimulate blood flow. Two or three drops of the blood is collected directly in to the cuvettes. Results were recorded by automated analyzers using complete blood counter method:

Hemoglobin concentration was determined by the Coulter LH 750, Advia 2120/120 or Sysmex XE 5000 /2100 cell counter.The blood is well mixed and placed on a rack in the analyzer .The cell counting

component counts the numbers and types of different cells, and ‘Hb’, then printed.

Quality control: Maintain the proper storage conditions,keeping the cuvettes tightly closed at room temperature. Blood samples must be dated when opened and be stored at room temperature or in the refrigerator. They are good for 30 days from the opening date. Bring the samples to room temperature before use and be sure to mix them well before testing.

Statistical analysis: probabilities of significant difference in the mean of Anaemia patients from different anemic conditions were determined according to student’s t-test Confidence limits were set at $p < .001$.

Results and Discussion: This study was carried out from Jan 2011 to Dec 2012 refers a total 27,038 cases. A total of 19872 females and 7166 males were included. Information was collected about religion social status; physiological condition, age, sex, Hb%, R.B.Cs. etc. Women mild anemic are 8047, moderate anemic are 6775, severe anemic are 5050 and men mild anemic are 2714, moderate anemic are 2581 severe anemic are 1871. The commonest age group affected by anemia was found from 21-30 age years (table I- table -II). And next higher cases are found in children of 1-10 yrs age group. Anaemia prevalence was lower in boys than girls’.

Anemia is ignored in most of the developing countries even though it is one of the most common prevalent “Public Health” problems and has serious consequences for national development. According to WHO (1992), similarly Anaemia is a public health Problem in Ujjain, MP, India. It is well known that there are a number of physiologic characteristics, such as age and sex influence haemoglobin concentration [5] [6]

United Nation Administrative Committee on Nutrition (2000) defined the Anaemia as reduction

in hemoglobin concentration below 11.0g/dl for women and 12.g/dl for men. [7,8]. Similar Hb values also obtained in male and female Anaemic subjects, in Ujjain [9].

There are two billion people, who are anemic because of iron deficiency. Prevalence of anemia in South Asian developing countries is highest in the world, mirroring over all high rates of malnutrition [10]. The world health organization estimated that prevalence

of anemia among women was 10% in developed countries and 42% in developing countries [11].

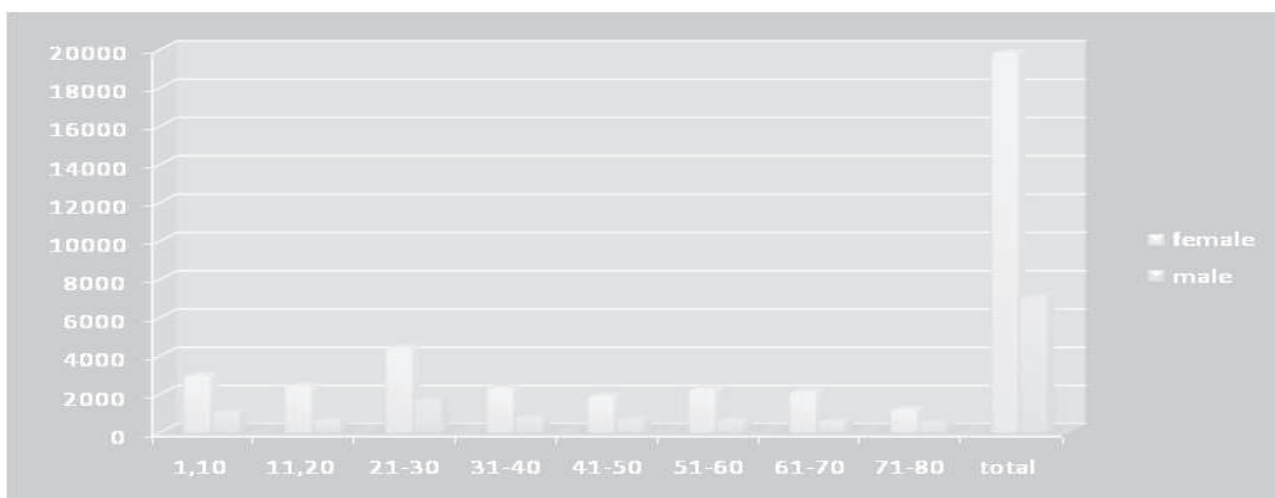
The present study reported that (73%) of girls were Anaemic ; out of which 40% were mildly Aneamic 34% moderately Aneamic 25% severely Aneamic . in men 26% were Anaemic : out of which were 37% mildly Aneamic ,36% moderately Aneamic 26% severely Aneamic in the Ujjain district.

Table -I . shows the distribution of severity of anemic women according to anemic condition ,” mild ,moderate ,severe “

Age group	Mild 10-10.9g/dl	Moderate 8-9.9 g/dl	Severe <8g/dl	Total
0-10	1142	1026	826	2994
11-20	1038	828	598	2464
21-30	1742	1531	1185	4458
31-40	938	943	476	2357
41-50	890	647	391	1928
51-60	876	737	675	2288
61-70	885	738	525	2148
71-80	536	325	374	1235
Total	8047	6775	5050	19872

Table -II . shows the distribution of severity of anemic men according to anemic condition ,” mild ,moderate ,severe “

Age group	Mild 10-10.9g/dl	Moderate 8-9.9 g/dl	Severe <8g/dl	Total
0-10	416	427	301	1144
11-20	220	278	195	693
21-30	639	689	438	1766
31-40	321	327	202	850
41-50	320	248	193	761
51-60	350	222	153	725
61-70	217	206	233	656
71-80	231	184	156	571
Total	2714	2581	1871	7166



Graph 1 show age and sex distribution

Acknowledgement: SSC and CHL hospital Ujjain, MP. India and Dr. Sushil gupta Dr. Bhagwat Dr. Anjuman khan, shalendre malviay for their kind

permission and help in these investigation and for the use of laboratory facilities in the hospitals

Reference:

- 1 World Health Organization, "The prevalence of Anaemia in women: a tabulation of available information", (2), (1992).
- 2 United Nations Administrative Committee on coordination sub – committee on Nutrition fourth report on the world Nutrition situation, Geneva: ACC/SCN in collaboration with international food policy research institute, 26, (2001) pp. 85-86
- 3 Bentley M.E. and Griffiths P.L., *European J. clinical Nutrition*, 57, (2003) pp.52-60.
- 4 Fatin Al-Sayesi ,Mamdooh Gari 2,Safaa Qusti 3 ,Nadiyah Bagatian 3 and Adel Abuzenadah2 prevalence of iron deficiency and iron deficiency anemia among females at university stage ,journal of medical laboratory and diagnosis ,Vol.2(1(2011)) pp.5-11 , January
- 5 Garn S.M., Ryaan A.S., Abraham S. and Owen G., Suggested sex and age appropriate values for low and deficient haemoglobin levels, *Am. J.Clin. Nutr*, 34, (1981) pp1648-1651
- 6 Yip R. Iron deficiency : contemporary scientific issues and international programmatic approaches .*J Nutr*. 124 1994 pp. 1479S-1490S.
- 7 Christopher V Charles Phd¹ ,Alastair JS Summerlee Phd¹ Cate Dewey Phd²),Anemia in cambodia : prevalence ,etiology and research needs *Asia Pac J Clin Nutr*;21 ,(2012) pp.171-181.
- 8 Matthew Rong Jie Tay¹ ,Yong Yau Ong² FRCP (Edin),FARCP Proceeding of Singapore Healthcare volume 20 , (2011) pp. 2
- 9 Junwal Manju and Bhai Ismail, Studies on Anaemia Hemoglobin Hb assays R.B.Cs. count in Ujjain, MP, and India, *ISCA Journal of Biological Sciences*, 1(2), (2012) pp.38-42
- 10 ME Bentley¹* and PL Griffiths The burden of anemia among women in India *European Journal of Clinical Nutrition*. 57, (2003) pp. 52-60.
- 11 World Health Organization/United Nations University/UNICEF Iron deficiency anaemia, assessment, prevention and control: A guide for program managers. WHO, Geneva, Switzerland, (2001). pp. 1-12.

Department of zoology Microbiology & Bioinformatics/
Govt. Madhav vigyan Mahavidhyalaya/ Ujjain (M.P.)
Manju Junwal/ Jayshree jatwa/Manju_junwalo@yahoo.co.in