

The Status of Serum Iron Level at south –east Caspian Sea-of IRAN

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Abstract-Aim: although anemia is common condition but it seem Iron deficiency anemia also comprise of high prevalence. Due to wide variety of adverse side effect of anemia among different age group of new born to children up to and adulthood, including mortality. to failure of different organ. . The evaluation of Iron deficiency which eventually will lead to anemia seems of outmost importance to prevent many adverse effect, **Material and methods:** the data for this study obtained from Danesh medical diagnostic laboratory in Gorgan at northern Iran. Using photometric method, by auto analyzer instrument **Result:** . The findings of this study indicated that about 62% of population in this region show to have iron concentration of lower range of reference interval, although about 7% also have iron overload as well. . The findings of this study indicated that about 62% of population in this region show to have iron concentration of lower range of reference interval, although about 7% also have iron overload as well. **Conclusion:** In view of important role of iron in biosynthesis of hemoglobin the possibility the incidence iron deficiency anemia. should be a matter of importance, in this region to be studied further, in a comprehensive research project, with simultaneous investigation of iron overload, in the region

Key words: Iron- iron deficiency anemia- iron excess.

I. INTRODUCTION

Iron is an Important element for human body not only for the biosynthesis Heme of hemoglobin the curtails macro protein molecule for the transport. Of Oxygen from the lung to the intestin within blood circulation ,this element, is an important Co- factors in the function of many enzymes which are responsible for oxido- reduction of various-compound among responsible for the transfer of electrons, particularly in the inner membrane of the mitochondria to produce ATP, the body chemical energy (1,2) .In Iron deficiency and its very side- effect anemia, is a well- known, disorder, and most common from of anemia when the level of serum Iron drops due to any reason ranges, from malnutrition to malabsorption, and the Heme a organic compound, which is an integral part of hemoglobin can be synthesis enough the hemoglobin ,molecule is not synthesis enough as a result Iron deficiency of Heme biosynthesis, which is occurred by depletion of Iron in human body .Iron is an element(3).

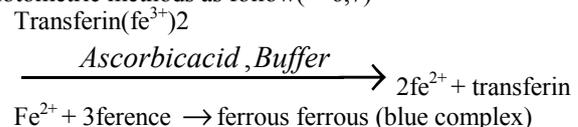
Which its concentration differ, according to the age. gender, there fore it is more required in child hood and by women during menses, due to rapid growth in children and bleeding during menstrual cycle By the time, serum iron concentration depleted to the level, which stimulate the iron deficiency anemia, it means, that body is storage of Iron also is at dangerous level or even deficient or depleted as well. It should be noticed that iron depletion and deficient are not similar equation and it is Iron deficiency which causes. The adverse effects of Iron deficient anemia under any condition,(4)

the iron deficiency anemia accompanied with, oxy hemoglobin reduction and weakness fatigue due to lack of oxygen to produce ATP: or the chemical energy. T Iron deficiency anemia develop gradually, and the patient may be entered into anemia without noticing the disorders.(5) The symptoms of Iron deficiency anemia significantly anemia significantly observed among children than adult, due to higher requirement of hemoglobin, and among women of child bearing age due to extra loss of blood, due to the physiological status. This study was set up to assess the prevalence of Iron deficiency in Gorgan, the capital city Golestan province at south-East of Caspian sea of northern Iran.

II. MATERIAL AND METHODS

This study was a combined research between Danesh medical diagnostic laboratory and Gorgan medical school, located in Gorgan at northern Iran. The data for this research project was obtained from the above mentioned laboratory. Each person was given a code name for the sake of anomity of the person involved 139 persons serum Iron level was recorded.

The method which was used was based on the photometric methods as follow(6,7)



The blue complex has a direct relation with Iron concentration and is evaluated photometrically, with minor variation among infants and children of up to two years and pregnant women.

According to manufacture kit reference interval the 37-165, 40-168 microg/dl and acceptable reference range for women and men respectively although it should be mentioned..(6,7)

That detailed study of serum Iron, need a comprehensive research, considering the newborns children of different age, fluctuation of Iron Concentration during three trimester of pregnancy and after given birth to the child's which can be a topic for future study in this region

There are some limitation to our study as it was mentioned above in additions to that proper assessment of body's Iron can be only established when serum transferrin and ferritin concentration are measured simultaneously with serum Iron concentration. Results: According to the present study the pattern of Iron deficiency, in this region The serum Iron concentration of sample population in this study shown in figure-1, a large population (62%) remain at lower range of normal range of about 37mg/dl regardless of age and gender, although our study indicated that about 7% showed do have Iron overload.

III. DISCUSSION

In human body there are about 4gram of Iron, which about 75% is present as transferrin and ferritin which are two important proteins which transfer Iron participate as integrate part of hemoglobin and myoglobin the remaining mostly within blood and store it in bone marrow respectively. Iron deficiency can be seen in iron deficiency anemia, due to malnutrition and malabsorption due to gastro intestinal diseases, chronic hemorrhage of gastointestinal wounds.(5,8) Acute bleeding and excessive bleeding during menstrual cycle. Iron overload also seen in liver damage and haemochromatosis a genetic abnormality leading to excess Iron absorption from small intestine. Iron deficiency is one of the most common factor for anemia and iron deficiency anemia, is considered to be in the top of the anemia list, also the anemia itself is multifactor in its origin(3,4). The incidence of anemia among older population increasing worldwide. It is estimated that it will increase from present 7% to about 12% by the year 2030, (3), and although there are variation by age and sex, but it seems, there is not a

significant differences particularly among older population, but it looks anemia, prevalence is lower among younger men and older women respectively. (2) There are extensive study on the causes of anemia, which include anemia due to dietary regimen deficiency, of Iron folic acid, and vit B12. Deficiency.(5) It seems Iron deficiency play an important role in anemia, which is mainly occur due to malnutrition and malabsorption(8), but bleeding from gastro intestinal also should be taken seriously. In separate study on older people about 17% of anemia was nutrient related and it is due to Iron deficiency compared to kidney disorder which is about 8%(2). In view of preventing Iron deficiency, to prevent the subsequent adverse effects, the establishment of Iron status. Iron in each region is an important topic, to study and it is recommended to conduct the population to either follow up the proper dietary regimen and or to be supervised, medically cared

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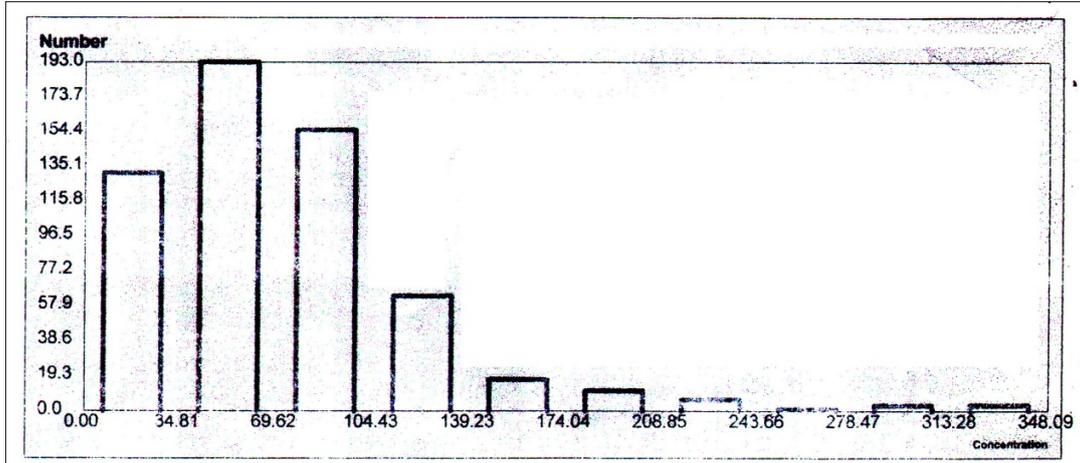


Figure 1. Serum Iron concentration- the unit of measurement is according to microgram/dl