SUMMARY & CONCLUSION

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In this work 500 children were screened for β-thalassemia trait. They were presenting at outpatient clinics of Kaliobiya hospitals with irrelevant conditions. All subjects ≥ 2 and ≤ 14 years of age were potential candidates for this work. 271 of them (54.2%) were males and the remaining 229 children (45.8%) were females.

For every child participating in this study blood cell count and indices using the Coulter Counter CBC5 were done. These includes; Hb concentration g/dl, RBCs count millions/mm^3 , Hct% , MCV (fl), MCH (pg) and MCHC g/dl.

The children were classified into 2 groups, Non-microcytic group and microcytic group according to MCV (any child < 76 fl in age group 2-6 years, < 77 fl in age group 6-12 years or < 78 fl in age group > 12 years is considered microcytic).

Then for the microcytic group; Reticulocytic count, hemoglobin electrophoresis, serum iron, and TIBC were done and transferrin saturation was calculated from serum iron and TIBC. According to the previous parameters the microcytic group was divided into 3 subgroups :

1- Iron deficiency anemia subgroup : serum iron < 50 μg/dl and transferrin saturation < 15%.

2- β-thalassemia trait subgroup : $HbA_2 \geq 3.5\%$ independent of the iron parameters.

3- Non-iron deficiency non β-thalassemia subgroup which include the remaining microcytic children.

The results of this study could be summarized as follows :

1- In the studied group of children (500) the prevalence of microcytosis was 25.8%, the prevalence of iron deficiency anemia was 16.6% , and the prevalence of β-thalassemia trait was 3%.

2- The severity of anemia is less and of microcytosis is more in β-thalassemia trait group when it is compared with iron deficiency anemia group.

3- Iron deficiency leads to decrease in the level of HbA_2 % . There is highly positive correlation between serum iron and HbA_2 %, consequently iron deficiency anemia is to be considered in diagnosis of β-thalassemia trait.

Conclusion

1- β-thalassemia seems to be a major health problem in our community.

2- Wide scale population screening through centers establishment in the densely populated province is recommended.

3- A national prevention program including health education must be planned and carried out.

4- Premarital screening can not be over-looked to provide genetic counseling for couples at risk.

5- The iron deficiency anemia is a distressing problem that should attract our attention to evaluate our dietetic habits and to plan for wide scale screening, searching for parasitic infestation in order to supply suitable treatment.