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PREVALENCE OF THALASSEMIA MINOR TRAIT IN PAKISTANI POPULATION PRESENTED AT AKUH FOR COMPLETE BLOOD COUNT ESTIMATION (CBC)

Pages with reference to book, From 98 To 98

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INTRODUCTION

Thalassemia is defined as a condition in which reduced rate of synthesis of one or more of the globin chains leads to defective haemoglobin production. Of the two major types, in alpha- thalassemia, oc-chain synthesis is absent or diminished and in beta-thalassemia, B-chain synthesis is absent or diminished. In B-thalassemia, anaemia occurs due to reduced B globulin, which in turn reduces HbA resulting in reduced MCHC and hypochromicity of the cells. Thalassemia minor is usually diagnosed by measuring concentration of HbA₂¹, complete blood count and blood film examination. However, relatively simpler and inexpensive methods have been reported before for quick discrimination between iron deficiency and thalassemia minor trait²⁻⁴. The present study is designed to estimate incidence of thalassemia minor using the proposed formula of England and Fraser² in Pakistani population.

SUBJECTS, METHODS AND RESULTS

The study was carried out during August 21 through October 4, 1992 at the clinical laboratory of The Aga Khan University Hospital. Daily, all the patients having the complete blood counts done were screened for presence of lower than 76 fl of MCV values. Complete blood counts were done by using S + W Coulter counter. The 'DF' values were calculated using proposed formula

$$DF = MCV - RBC - 5Hb - 3.4.$$

During the study of 43 days, a total of 12,250 complete blood counts were done. On an average 284 analyses were done daily out of which 38.8 subjects had a lower than 76 fl of MCV. Negative tF was present in 3.4% of the population (Table).

TABLE. Prevalence of thalassemia minor trait in AKUH patient population.

Total days observed (No.)	Total samples analyzed (No.)	Mean \pm SD/day		
		Analyzed (No.)	Low MCV (No.)	Detected % with -DF
43	12,250	284 \pm 81	38.8 \pm 13.5	3.4

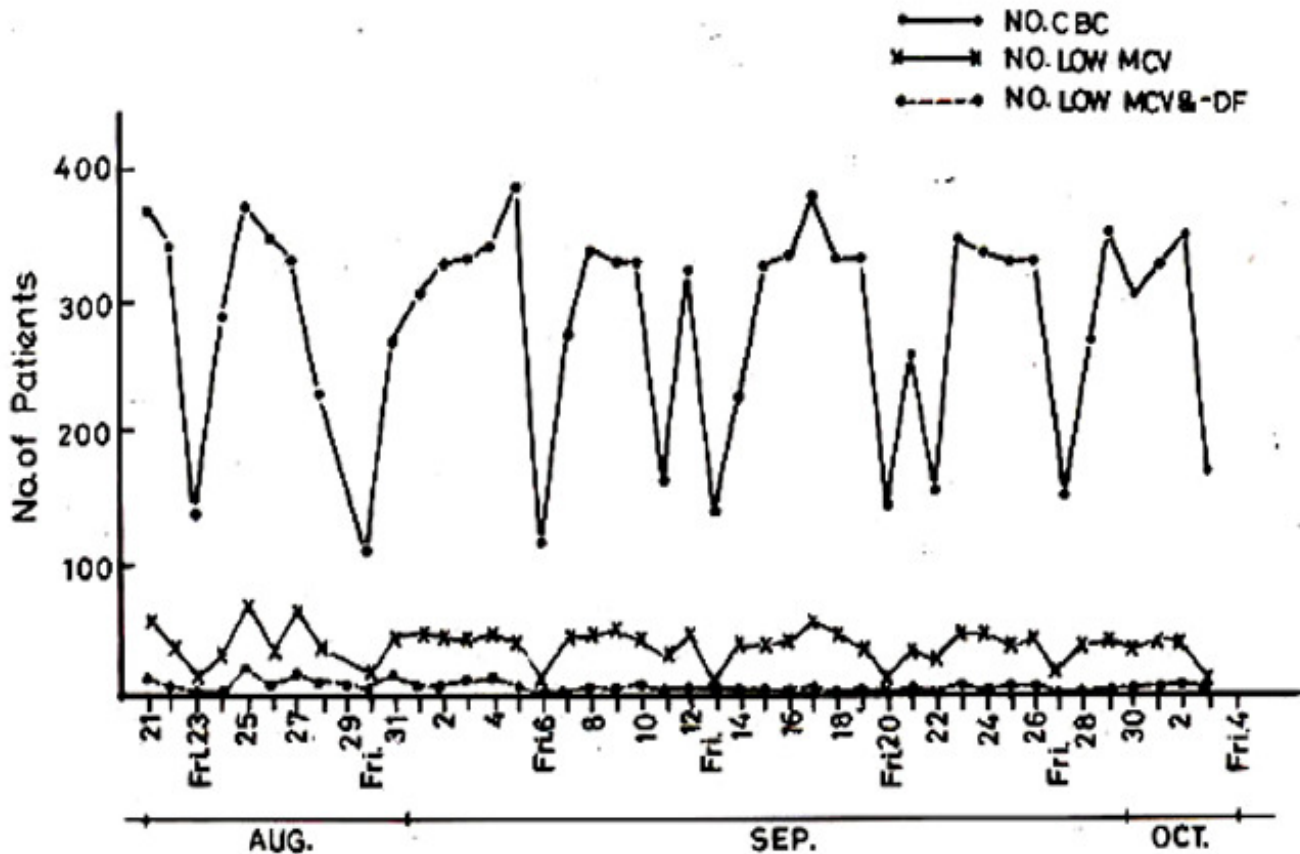


Figure. Daily screened low CBC, MCV and MCH with -DF from August 21 to October 4, 1992.

The figure shows daily total analysis of CBC, MCV and calculated negative DFs. During the working days, the number of patients visiting the laboratory was approximately about 300, whereas on Fridays, it dropped to a figure between 100 to 150. Consequently, the number of low MCV and -DF dropped to a lower number on the Fridays.

COMMENTS

The formula of DF was shown previously to identify correctly 99% of the thalassemia minor cases². The fact that in this random population, the number of thalassemia minor seemed to be high and correlated well with the number of visits suggests that the disease is prevalent in this population as has also been observed by other workers⁵. The methodology is not only useful and inexpensive, but also highly feasible for a mass community screening of population where thalassemia trait is highly prevalent. Early diagnosis of thalassemia minor cases in endemic population has an important future implication for controlling the spread of the disease.

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