

ROLE OF MENTZER INDEX IN DIFFERENTIATING IRON DEFICIENCY ANEMIA AND THALASSEMIA TRAIT IN PREGNANT WOMEN

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INTRODUCTION

- Most prevalent cause of microcytic hypochromic anaemia in pregnant females is beta-thalassemia trait and iron deficiency anaemia in Pakistan ¹.
- According to WHO statistics, more than one-fifth of females in Pakistan suffer from anaemia.
- The prevalence of anaemia among pregnant females in Pakistan is 29%-50% while that of beta- thalassemia trait is 7%-9% ².
- Mentzer Index has a sensitivity and specificity of 91% and 83% for iron deficiency anemia and 83% and 91% for thalassemia trait in pregnant women ³.

OBJECTIVES

- To determine the diagnostic accuracy of Mentzer Index for diagnosis of iron deficiency anemia and thalassemia trait taking iron deficiency anemia for iron deficiency anemia and thalassemia trait as gold standard in anemic pregnant patients.

METHODS

- Study Design:** Cross sectional study
- Study Setting:** MCH, Pakistan Institute of Medical Sciences Islamabad, Pakistan
- Study Duration:** Six-month: January to June 2024
- Inclusion criteria:** 18 -45yrs old pregnant females with singleton pregnancy of >20 weeks by LMP and Hb < 11gm/dl.
- Exclusion criteria:** Cause of anemia other than IDA and beta- thalassemia trait, CLD, CKD, known malignancy, blood transfusions.
- Data collection:** Convenient sampling technique was used.
- Data analysis:** was conducted using SPSS version 22.0 and MS Excel 360.

CONCLUSIONS

The burden of thalassemia and consanguinity is continuing to rise, which demands for increase detection in this high-risk antenatal population in a cost-effective manner. Applying the simple and inexpensive Mentzer index calculation to routine complete blood counts could improve screening and triaging of microcytic anemia early in pregnancy. This can minimize inaccurate diagnoses, prevent over-treatment with iron, and prompt definitive thalassemia testing when appropriate – ultimately improving maternal and fetal outcomes related to this preventable yet detrimental genetic disease.

RESULTS

42.3% of pregnant females were between 29-38yrs old. Majority were gravida 2 with gestational age between 30+1 weeks to 35 weeks. 47.6% were booked and had no complain at the time of presentation with anemia. 50% had Hb 7-10gm/dl. 90.3% had normal electrophoresis and majority with IDA had Serum Ferritin 11.91 ± 2.87 µg/dl.

GRAPH 1: CLINICAL PARAMETERS

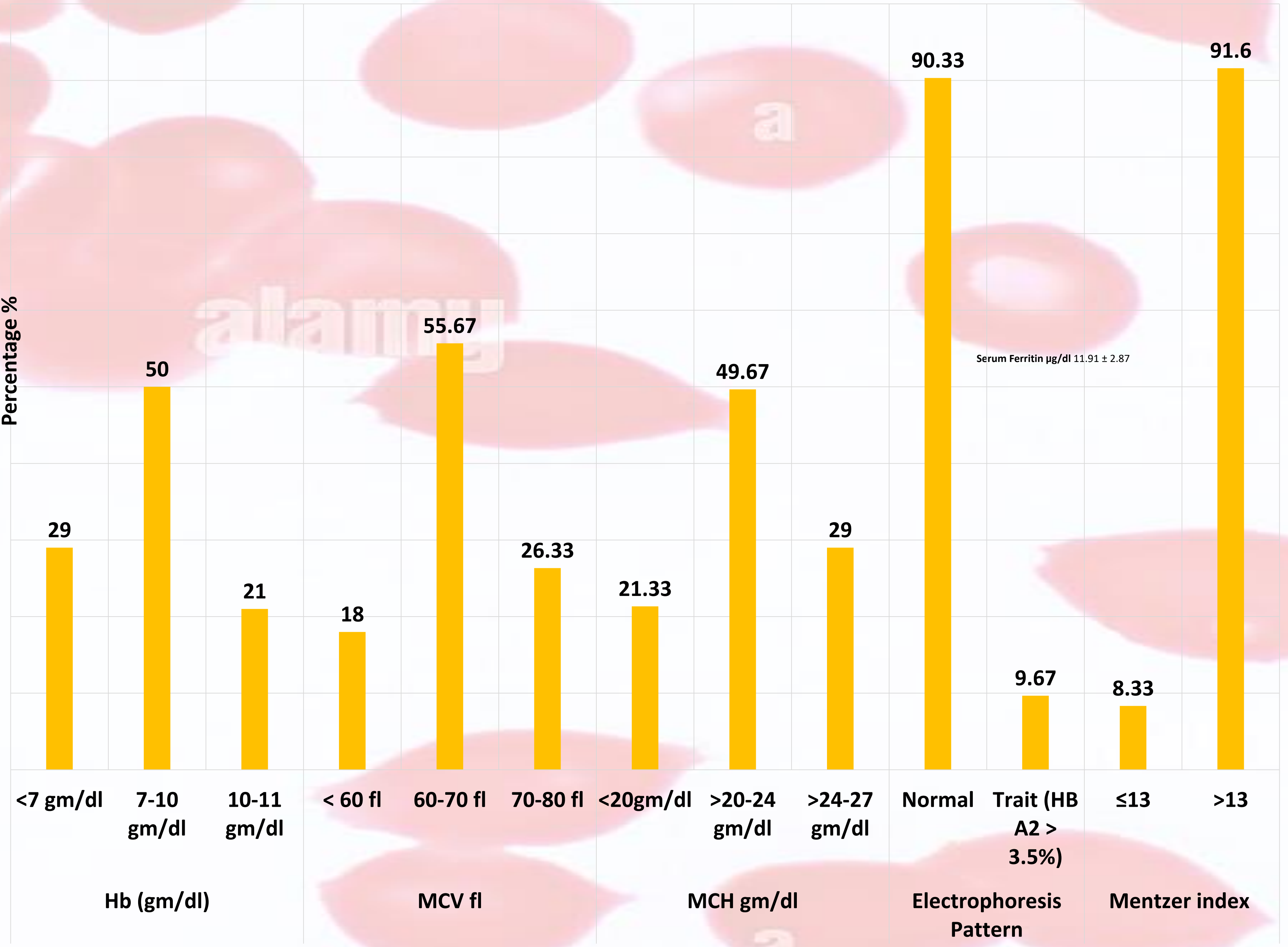


TABLE 1: DEMOGRAPHIC CHARACTERISTICS

Parameters (n=300)		Frequency (%)
Age	18-28 yrs	113 (37.67)
	29-38 yrs	127 (42.33)
	39-45 yrs	60 (20)
Gravidity	1	71 (23.67)
	2	94 (31.33)
	3	85 (28.33)
	4 and more	50 (16.67)
Gestational Age at the time of Presentation	20+1 weeks to 30 weeks	60 (20)
	30+1 weeks to 35 weeks	146 (48.67)
	35+1 weeks to 40 weeks	94 (31.33)
Booking Status	Booked	143 (47.67)
	Non-Booked	92 (30.67)
	Referred	65 (21.67)
Presenting Complaint	Fatigue	97 (32.33)
	Shortness of Breath	45 (15)
	Palpitations	23 (7.67)
	No Complain	135 (45)

Serum Ferritin µg/dl
Mean ± S.D
11.91 ± 2.87

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