

INCREASE MALNUTRITION AWARENESS: CHALLENGE FOR THE FUTURE

Circulating Vitamin B12 as an Indicator of acute malnutrition and Liver dysfunction in Patients with Anorexia Nervosa: **A Case Series**

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Anorexia nervosa (AN) is an eating disorder that can lead to multiorgan damage. The low cardiac output and glycogen depletion resulting from caloric restriction cause hepatocyte hypoxia, leading to increased plasma levels of transaminases and vitamin B12, which serve as early indicators of liver damage.

CASES:

Four female patients with AN were examined at the Clinic of Eating Disorders Sapienza University, Rome, Italy. Three patients showed vitamin B12 levels above the normal range, while one was at the upper limit. None of them was taking any supplements including vitamin B12. Two out of the four patients also presented with hypertransaminasemia.

Patients	S.S.	F.F.	C.C.	M.S.
Age (years)	14	19	15	22
Weight (Kg)	53.6	48.1	50.7	38.4
Height (cm)	169.5	165	168.5	161.5
BMI (Kg/m2)	18.7	17.7	17.8	14.8
BMI Z- Score	-0.513	_	-1.114	-
Phase Angle (°)	6.5	7.7	4.1	4.5
TSF (mm)	8.2	7	9	5.6
Vitamin B12 (pg/mL)	915	1229	687	2000
GOT (U/L)	23	23	18	42
GPT (U/L)	41	25	11	77
GammaGT (U/L)	17	12	11	23



FIGURE 1: Effect of anorexia nervosa in multiple organs



TABLE 1: Comparison among patients with AN

MANAGEMENT:

Elevated vitamin B12 levels are early biomarkers of acute malnutrition in patients with AN; the timing of vitamin B12 levels and its relevance for liver dysfunction in patients with AN needs to be thoroughly clarified. Vitamin B12 is an important marker for acute malnutrition with hypertransaminasemia due to caloric restriction, distinct from refeeding impact on liver enzymes. It could also be a valuable parameter to establish appropriate energy restoration and to assess follow-up during the refeeding of patients with AN.

References

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One patient was treated by oral zinc supplementation, although there are no clear recommendations for the treatment B12 of hypervitaminosis in the context of AN

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