THE RELATIONSHIP BETWEEN HEMOGLOBINE AND BODY MASS INDEX IN OWERWEIGHT AND OBESE PATIENTS

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Introduction: Both overweight/obesity and central obesity were inversely associated with anemia in the studies. In our study, we aimed to determine the relationship between different haemoglobin (Hb) levels and body mass index (BMI).

Methods: A total of 146 patients [131 (89.1%) female and 15 (10.2%) male] were enrolled in the study. Patients were divided into five groups namely group-1 (Hb ≤ 7 gr/dL), group-2 (7gr/dL < Hb ≤10 gr/dL), group-3 (10 gr/dL < Hb ≤ 12 gr/dL), group-4 (12 gr/dL < Hb ≤ 14 gr/dL) and group-5 (14 gr/dL < Hb). Complete blood count, BMI, biochemical parameters, iron and iron binding capacity (IBC), ferritin, vitamin B12 and folic acid levels of all patients were measured.

Results: BMI levels were found to be significantly different in each five groups. These differences were found between group-1 & 3 (p=0.0001), group-2 & 3 (p=0.0001), group-3 & 4 (p=0.011) and group-3 & 5 (p=0.032). A positive correlation was found between BMI and Hb (r=0.199, p=0.017). There was a positive correlation between BMI and mean corpuscular volume (MCV) (r=0.298, p=0.001), negative correlation between BMI and IBC (r=-0223, p=0.011).

Table 1. Demographic data of patients

	Group 1	Group 2	Group 3	Group 4	Group 5	p value
	n=19	n=36	n=31	n=40	n=20	
Age	43,21±18,72	45,44±14,84	42,62±13,48	42,9±12,48	47,3±11,47	0,723
Gender f/m	16/3	35/1	30/1	38/2	11/8	
Body mass index	26,33±4,94	29,22±6,1	36,18±6,6	31,18±7,76	30,77±4,07	0,0001
Hemoglobin	5,9±0,7	8,31±0,67	11,34±0,42	12,78±0,64	14,92±1,01	0,0001
Hematocrit	32,28±49,14	27,38±2,58	35,42±1,28	39,41±1,73	44,94±2,66	0,004
MCV	58,78±4,62	66,77±8,36	87,81±6,01	87,75±7,22	90,28±6,02	0,0001
Platelet	334,42±123,48	359,33±101,7	273,56±52,14	306,2±71,39	244,05±72,79	0,0001
Iron	15,84±15,52	19,44±24,74	57,56±23,17	73,85±26,75	97,05±36,08	0,0001
IBC	438,78±45,86	399,47±90,28	311,47±64,57	273,97±51,01	248,94±60,95	0,0001
Ferritin	3,01±3,2	3,11±1,93	16,96±19,68	29,38±23,38	37,98±25,65	0,0001

MCV: Mean corpuscular volume, IBC: Iron binding capacity, f:female, m:male

Conclusions: In obese patients, adverse effects on quality of life, exercise capacity and cardiovascular diseases of the anemia should be considered while planning lifestyle changes in obesity.