



Anisocytosis is Associated with High Body Mass Index and Poor Adaptation to Oxidative Stress in Obese Patients with Type 2 Diabetes Mellitus

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ABSTRACT This paper aims to evaluate interrelationships among components of complete blood count (CBC), especially red cell distribution width (RDW) and oxidative stress markers, malondialdehyde (MDA) and superoxide dismutase (SOD) in erythrocytes and ferric reducing ability of plasma (FRAP) in obese diabetics (DM-OB). A cross section of 55 DM-OB were compared with 55 healthy non-obese non-diabetic controls (C). Of CBC indices, RDW was maximally impacted indicating anisocytosis in DM-OB accompanied by increased MDA and lowered SOD and FRAP. RDW correlated significantly with MDA in DM-OB but not in the C. Odds ratio (OR) indicated a 15 times higher risk of having a high RDW among the DM-OB. RDW directly correlated with BMI but not with antioxidant enzyme SOD or total non-enzymatic antioxidant activity indexed by FRAP. The overall result indicated that adaptation achieved through increased SOD observed in the C broke down in the DM-OB, resulting in anisocytosis in obese diabetics.