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Lipid Peroxidation in Iron Deficiency Anemia

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I have read with interest the paper by Bartal et al. [1] in a recent issue of the Journal. The authors stated that 'lipid peroxidation was much higher in iron-deficient cells than in control cells'. However, the malonyldialdehyde (MDA) levels were given as nanomoles per gram hemoglobin (Hb). In iron deficiency anemia, more cells are required for 1 g Hb than in normal cells. MDA is not related to Hb but to the cell membrane. Therefore, MDA levels should be expressed per red blood cell rather than per gram Hb.

When I determined catalase activity in iron deficiency anemia [2], which was the first demonstration of an iron-containing enzyme deficiency, it could be shown when expressed per red cell but not with Hb level, as later stated by Acharya et al. [3].

It is surprising to see that some studies are not appreciated in the literature despite priority and several reinforcements [2, 4, 5].

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Reply

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We do agree that malonyldialdehyde (MDA) reflects lipid peroxidation and is not related to hemoglobin (Hb). In their detailed paper about auto-oxidation of human red blood cell lipids, Stocks and Dormandy [1] outlined the TBA reaction and calculated MDA in nanomoles per gram Hb. Later, Acharya et al. [2] emphasized that iron deficiency anemia cells were more sensitive to oxidation when MDA levels were expressed per gram Hb. Our paper supports these findings. Unfortunately, we could not quote Prof. Özsoylu's paper in the *Turkish Journal of Pediatrics* (1964), as this journal is not available in our library.

References

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