

The influence of calorie restriction during fasting of the month of ramadhan on free radicals and antioxidants expressed in the form of malondialdehyde and glutation in healthy young males

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Abstrak

Aim: To observe the effect of calorie restriction on the formation of lipid peroxide (malondialdehyde/MDA) caused by free radicals and antioxidant level (glutathione/GSH) among healthy young males during Ramadan fasting.

Subjects and Methods: Prospective self-controlled study was performed on 22 healthy men aged 20-25 years who were presumed to be undergoing the calorie restriction. Subjects were observed four times: day 7 prior to the Ramadan month, the 7th and 21st days of Ramadan and day 7 after Ramadan. All data are presented as mean averages (SEM); all statistical comparisons were made using Anova Repeated Measures and Pearson's bivariate correlation.

Results: Caloric intake decreased by 22 - 25% and MDA decreased significantly ($p = 0.002$), while GSH levels increased significantly ($p = 0.047$). There was no correlation between calorie restriction and MDA levels ($p = 0.27$; $r = 0.25$), but calorie restriction and GSH were correlated ($p = 0.049$; $r = -0.18$).

Conclusion: This study showed that calorie restriction during Ramadan fasting decreased MDA and raised plasma GSH levels.