

Effect of a ketogenic diet on the nutritional parameters of obese patients: A systematic review and meta-analysis

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Abstract

The effect of a ketogenic diet (KD) on biochemical parameters and nutritional status has been the subject of debate over the years, as several randomized clinical trials (RCTs) obtained different results. Method: A systematic review and random-effects meta-analysis of RCTs comparing KD with a balanced diet was performed by means of a search of PubMed, Cochrane Library, Scopus, and Web of Science. Trials where the method for measuring the response variables was unclear, those that considered pathologies other than chronic non-communicable diseases and those with participants receiving pharmacological treatment for obesity were excluded from the comparison. Results: Of the studies included in the meta-analysis, no statistically significant standardized mean differences were observed for body mass index (BMI) ($d = -0.457$, $p = 0.359$), total cholesterol, COL-T ($d = 0.230$, $p = 0.591$), high-density lipoprotein, HDL ($d = -0.028$, $p = 0.934$), low-density lipoprotein, LDL ($d = 0.528$, $p = 0.173$), or triglycerides, TG ($d = -0.283$, $p = 0.222$), with high values of heterogeneity. The percentage of women included in the studies is a significant moderating variable in terms of BMI ratio ($z = -6.68$, $p < 0.001$) and TG ($z = -2.27$, $p = 0.023$). Conclusion: A KD shows no more benefits on nutritional parameters than a balanced diet, and adverse effects of being on the diet are sometimes reported. © 2021 by the authors. Licensee MDPI, Basel, Switzerland.

Author keywords

KD; Ketogenic diet; Meta-analysis; Obesity; Systematic review