

Type 2 diabetic patients and their offspring show altered parameters of iron status, oxidative stress and genes related to mitochondrial activity

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Type 2 diabetes (T2D) is directly related to alterations in iron status, oxidative stress and decreased mitochondrial activity, but the possible interaction of these parameters among T2D patients and their offspring is unclear. The whole study included 301 subjects: 77 T2D patients and one of their offspring and 51 control subjects with one of their offspring. The offspring were older than 20 years old. We measured parameters of iron status (serum iron, ferritin and transferrin receptor), diabetes (pre and post-prandial glucose, insulin, lipids), oxidative stress (Heme oxygenase activity, TBARS, SOD, GSH, Vitamin E), as well as the expression of genes in blood leukocytes related to mitochondrial apoptosis (mitofusin and Bcl/ Bax ratios). The offspring of T2D patients had increased levels of serum ferritin ($P < 0.01$) and lower transferrin receptor ($P < 0.008$); higher insulin ($P < 0.03$) and total and LDL cholesterol; higher heme oxygenase and SOD activities increased TBARS and lower GSH; decrease