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Migraine in patients with metabolic syndrome: Is there a relationship to leptin?

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Abstract

Aim: Previous studies have reported association between migraine and metabolic syndrome (MS) and MS and leptin (a protein product of obesity gene). We aimed to determine whether there is a link between MS, leptin and migraine covariates (frequency and duration), as related data are sparse or even controversial.

Study design: Included were 60 patients with MS and comorbid migraine (mean age of 47.83±7.31 years). Demographic, anthropometric, clinical and lab characteristics were identified. Leptin concentrations were also measured.

Results: Nearly 58.33% of patients had episodic migraine, 35% had chronic migraine and 6.67% had tension type headache (TTH). All had obesity, T2DM and hypertension, 80% had hypertriglyceridemia and/or dyslipidemia, 81.67% had insulin resistance (IR) and 58.33% had hyperleptinemia. Compared to TTH, patients with migraine had higher body mass index (BMI), waist circumference (WC), blood pressure, levels of LDL-c, insulin and leptin and poor glycemic control. Leptin concentrations were correlated with BMI (r=0.547,P=0.008), WC (r=0.445,P=0.002), HbA1c (r=0.656,P=0.001) and insulin (r=0.613,P=0.008). In logistic regression, correlation between leptin and headache frequency and duration disappeared after adjustment of age, BMI, WC and insulin levels.

Conclusions: we conclude that comorbid migraine with MS is related to obesity (total body and abdominal adiposity) and insulin abnormalities but not to leptin.