



PSYCHODERMATOLOGY

STRESS AND OBESITY-ASSOCIATED ACANTHOSIS NIGRICANS

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Introduction: Childhood obesity pandemic growing and its dramatic metabolic and vascular complications in adulthood are among chief public health challenges facing the developed world. An increasing number of studies suggests that chronic psychosocial stress significantly contribute to the development of obesity and its metabolic alterations such as insulin resistance. As a neuroendocrine and an immune-related organ, skin senses and responds to both endogenous and exogenous stress stimuli by inflammation and increased cell proliferation. Potential mechanism of the association of chronic psychosocial stress with obesity-associated acanthosis nigricans (AN) include increased glucocorticoid secretion, hyperinsulinemia and insulin resistance per se.

Objective: To determine serum cortisol level and serum insulin level and their correlations with AN.

Materials and Methods: We investigated anthropometric measurements in 54 adolescents with abdominal obesity diagnosed on WHO Growth reference data for 5-19 years. First we determined the presence and severity of AN by Burke's quantitative scale, then we analyzed morning serum cortisol level and insulin sensitivity status by both HOMA-IR and QUICKI.

Results: We revealed overweight (BMI 32.99 +/- 1.65 kg/m²), abdominal obesity (Waist circumference 95.32 +/- 3.46 cm), hyperinsulinemia (IRI 24.84 +/- 4.07 µIU/mL) and mildly insulin resistance (HOMA-IR 5.53 +/- 1.02). Acanthosis nigricans was presented in 34 adolescents predominantly with one location (neck) and rough to touch. Serum cortisol was significantly higher in the group with AN (400.85 +/- 53.39 nmol/L) than in the group without AN (238.3 +/- 39.52 nmol/L) (p<0.001). There are strong positive correlations between investigated values.

Conclusions: The findings of this study support the idea that obesity-associated AN has its implication among psychocutaneous disorders. Despite expanding development of psychodermatology, no one to the best of our knowledge has studied these particular correlations in the context of AN. We believe that our research will serve as a base for future





studies on this topic.

