25. Novel adipokine tazarotene induced gene 2 correlations with increased cardiovascular risk determined by body composition, insulin resistance, dyslipidemia and diabesity in Saudi women

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Tazarotene induced gene 2 (TIG2) is a novel adipokine that is believed to be a mediator for the adipose tissue inflammation that occurs in obesity. The present study compared TIG2 levels between healthy and type 2 diabetic women matched for age and body composition. We also aimed to assess the relationship of serum TIG2 levels with body composition, insulin resistance, dyslipidemia and diabesity in Saudi adult women. This observational case-control study was conducted at the Departments of Physiology and Medicine, Saud University Riyadh, Saudi Arabia, from September 2013 to April 2014. A total of 100 subjects were recruited, including 51 adult diabetic females, and a control group consisting of 49 healthy females. Finally, 80 subjects were selected as per inclusion criteria. In the finally selected group, 45 were diabetics and 35 were healthy subjects matched for age, BMI and body composition with age ranging between 30 and 65 years. Body composition analysis was estimated using Bioelectrical impedance analyzer. Fasting 10 ml venous blood samples were analyzed for glycemic markers, lipids and TIG2. Insulin resistance indexes were calculated by homeostasis model assessment of insulin resistance (HOMA-IR) and quantitative insulin sensitivity check index (QUICKI) using standard formulas. The two groups were matched for age, BMI, body fat percentage (BF%), basal metabolic rate (BMR), truncal fat and WHR. Serum TIG2 levels were higher in diabetics than controls (256.09 pm 57.01 vs 305.63 pm 73.66, p = 0.001). Systolic blood pressure (p = 0.001), weight (p = 0.040), fat mass (p = 0.045) and visceral fat (p = 0.025) were found to be significantly higher in diabetics when compared to controls. FBS, HBA1C, LDL, TG, insulin, HOMA-IR, QUICKIE and TIG2 were significantly higher and HDL was significantly lower in diabetics compared to controls. In Spearman’s correlation analysis, TIG2 correlated positively with age (r = 0.300, p = 0.007), WHR (r = 0.250, p = 0.026), weight (r = 0.270, p = 0.016), BMI (r = 0.364, p = 0.003), BF% (r = 0.325, p = 0.003), fat mass (r = 0.250, p = 0.026), Visceral fat (r = 0.356, p = 0.001) and truncal fat mass (r = 0.249, p = 0.027), serum basal insulin (r = 0.354, p = 0.001) and HOMA IR (r = 0.275, p = 0.015), while it correlated inversely with QUICKI (r = -0.283, p = 0.012). In multiple linear regression analysis body age (r = 0.236, p = 0.023), BF% (r = 0.265, p = 0.014) and basal insulin (r = 0.265, p = 0.014) levels were independent predictors of TIG2. Serum TIG2 levels are elevated in patients with type 2 DM compared to healthy control subjects and are positively correlated with adiposity and insulin resistance in Saudi adult women with type 2 DM. Our study indicates that the determination of body fat may have a key role in prediction and detection of the increased cardiometabolic risk in Type 2 DM.


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In the Kingdom of Saudi Arabia (KSA), cardiovascular diseases (CVDs) are the primary cause of death among adults, representing 46% of total mortality in 2014. This study’s objectives were to assess the prevalence of cardiovascular risk factors (CVRFs), and calculate the cardiovascular risk (CVR) among King Saud University employees and their families. Moreover, it aimed at assessing the possible effects of living in KSA on the heart health of expatriate employees and their families. A cross-sectional study was conducted on 4500 university employees and their families aged ≥18 years old, using the World Health Organization STEPwise approach to surveillance of CVRFs. CVR was then calculated for participants using the Framingham Coronary Heart Risk Score calculator. The mean age of participants was 39.3±13.4 years. The prevalence of CVRFs was as follows: low fruit/vegetable consumption of <5 portions/day...