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ASSOCIATION BETWEEN VITAMIN D STATUS AND RISK OF METABOLIC SYNDROME AMONG FEMALE UNIVERSITY STUDENTS IN SAUDI ARABIA

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Vitamin D deficiency prevalent in all age groups across the world, is common in obesity and may play an important role in the risk factors of metabolic syndrome (MS). This cross-sectional study evaluates the association between vitamin D (25(OH)D) level and the incidence of MS and its components in young Saudi Arabian women.Methods: The study group subjects were 300 female undergraduate students from Saudi Arabia who had a mean age greater than 18years. Anthropometric and biochemical characteristics were determined. MS was diagnosed in 17%of the subjects (13%had three risk factors for MS and 4%had four risk factors).Overweight/obese subjects had significantly worse anthropometric and biochemical characteristics, including waist/hip ratio (WHR), triglyceride levels (TG), low-density lipoprotein cholesterol levels (LDL-C), blood pressure (BP) and high-density lipoprotein cholesterol levels (HDL-C) compared to healthy weight subjects. Of the subjects diagnosed with MS, 59%had mild and 8.6% had severe 25(OH)D deficiency. There was also a significant negative association between 25(OH)D and both fasting blood glucose (FBG) and HOMA-IR (glucose r=-0.54;P<0.01; HOMA r=-0.31;P<0.05) among obese/overweight subjects. The primary predisposing risk factor for MS was obesity (odd ratio: OR;4.92). The second most predisposing risk factor for MS was abdominal obesity (OR;4.26), as indicated by waist circumference (WC), followed by hypertension (OR;4.11), low HDL-C (OR;3.42), FBG (OR;3.11) and 25(OH)D (OR;2.87). MS prevalence increased with decreasing circulating 25(OH)D levels. For the young women in our study, being overweight/obese was associated with a high prevalence of MS and low vitamin levels; vitamin D deficiency is a known as cause of poor glycaemic control.

Key words: Vitamin D deficiency: Blood glucose, insulin resistance and lipid profile.

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