

ASSOCIATIONS OF LOW 25 HYDROXY VITAMIN D AND HIGH PARATHYROID HORMONAL LEVELS WITH OBSTRUCTIVE SLEEP APNEA AND NON-ALCOHOLIC FATTY LIVER DISEASE IN ASIAN INDIANS

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Objective: We looked for any associations of 25 hydroxy vitamin D [25(OH) D] and PTH levels with clinical, anthropometric, biochemical and body composition parameters in Asian Indians with OSA and NAFLD and compared these with either of these disorders alone.

Methods: 180 overweight/ obese subjects [body mass index (BMI)>20kg/m²], 74 with OSA with NAFLD (group 1), 35 with OSA without NAFLD (group 2), 42 without OSA and with NAFLD (group 3) and 29 without OSA and without NAFLD (group 4) were evaluated. Degree of NAFLD was based on abdomen liver ultrasound and of OSA on overnight polysomnography. Subjects with an AHI>5/hour were considered to have OSA. Clinical, anthropometric, body composition, biochemical parameters, fasting insulin levels, value of HOMA- IR, serum 25(OH) D, calcium and PTH levels were measured.

Results: Blood pressure, WC, HC, subscapular, LT, suprailiac, BF and BF, fasting blood glucose (FBS), serum triglycerides (TG), total cholesterol (TC) and alanine aminotransferase (ALT) were significantly higher in the group 1 as compared to other groups. Subjects with OSA and NAFLD had lower serum 25(OH) D and higher serum PTH levels as compared to other three groups. We observed significantly high values of systolic blood pressure (p=0.002), diastolic blood pressure (p=0.003), BMI (p=0.04), WC (p=0.005), FBS (p=0.005), TG (p=0.002), TC (p=0.002), ALT (p=0.03), fasting insulin (p=0.02) and HOMA-IR (p=0.03) in the lowest 25(OH) D quartile. Multivariable-logistic regression showed that low serum 25(OH) D [OR (95%CI): 4.31 (2.25-6.90), p=0.0001] and high PTH [OR (95%CI): 2.65 (1.59- 3.40), p=0.0001] level were independently associated with OSA and NAFLD.

Conclusion: Low serum 25(OH) D and high PTH levels were independently associated with the presence of OSA and NAFLD in Asian Indians.

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