

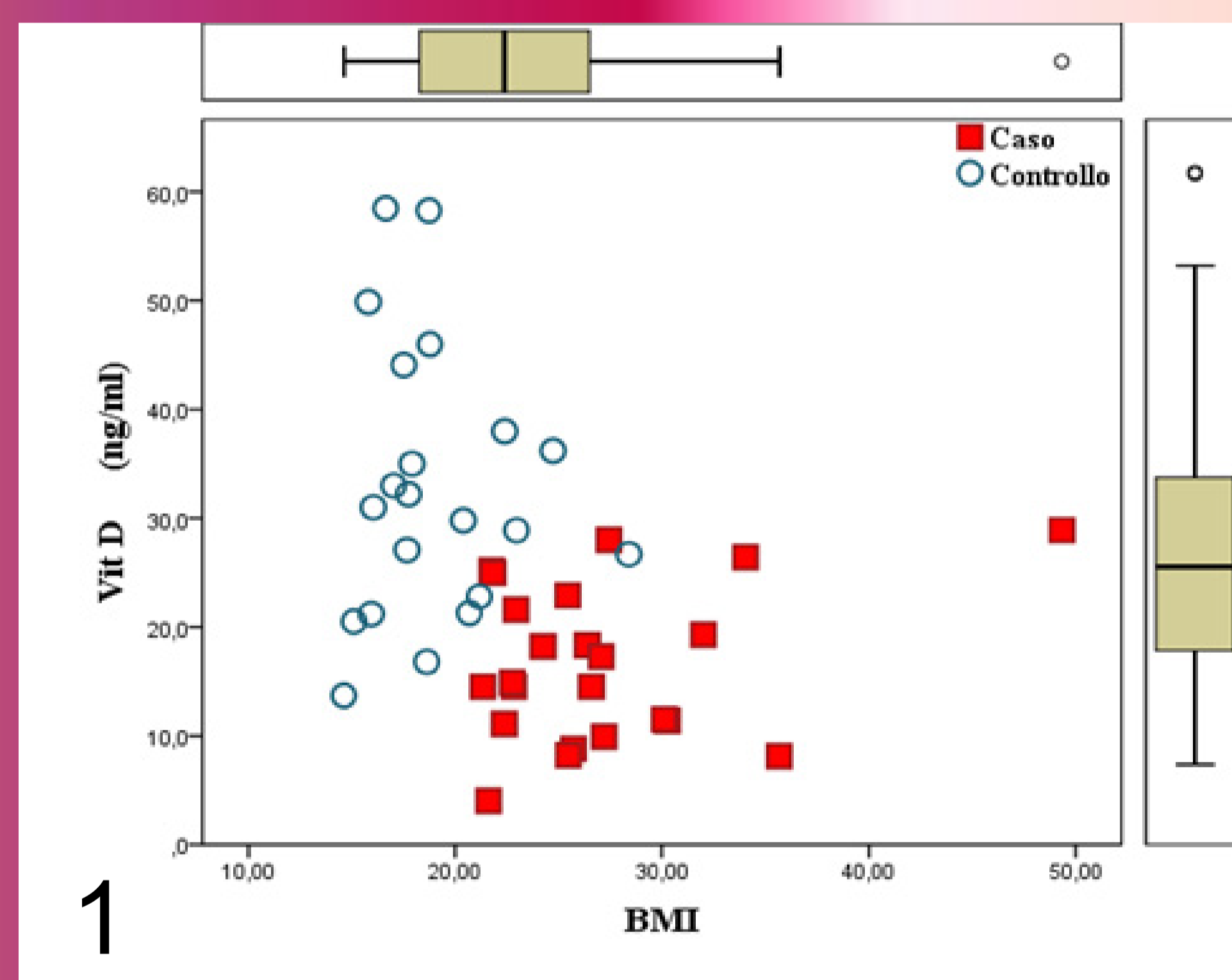
Association of serum levels of 25(OH) cholecalciferol and childhood obesity

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Background: Vitamin D is now recognized as a prohormone, essential for the maintenance of mineral homeostasis, calcium metabolism and normal skeletal architecture. 30 ng/ml or greater can be considered sufficient serum levels. The prevalence of vitamin D deficiency among severely obese children is almost 49% caused by the fact that it is sequestered in the larger body pool of fat of such individuals, being vitamin D fat soluble. Vitamin D deficiency has been recently associated with cardiovascular disease and metabolic syndrome in morbid obesity. Particularly, 25(OH)D levels were inversely correlated with HbA1c, insulin, LDL, triglycerides, total-cholesterol and insulin resistance.

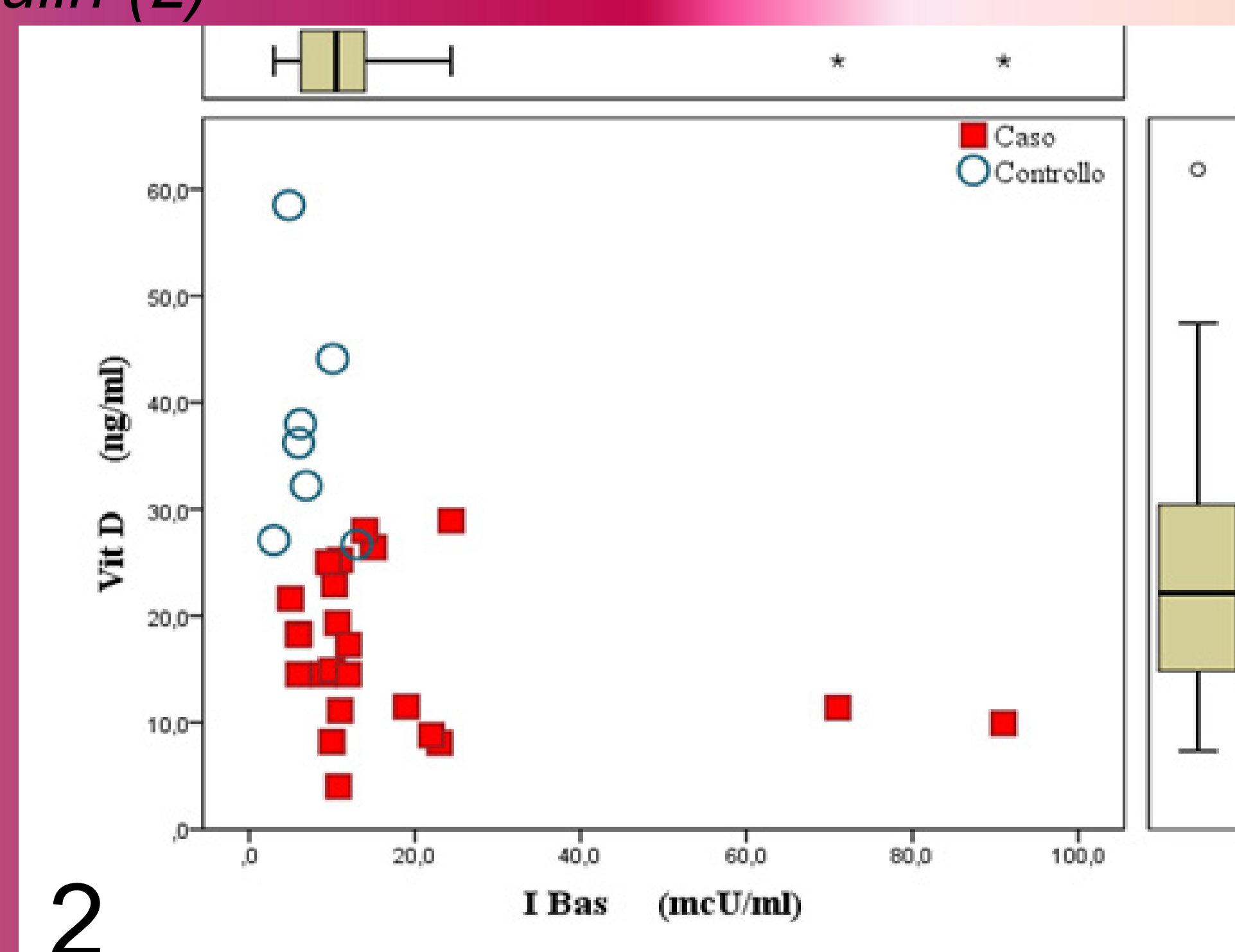
Objective: To investigate the action of this hormone in obese children visited in Pediatric Endocrinology and Adolescentology Clinic of L'Aquila and to examine the relationship between 25(OH)D concentration and other parameters commonly altered in obesity.

Methods: Prospective study involving 23 obese children (Ob) (13 girls; 11,06 ± 3,98 years, BMI >95^oC) and 21 normal weighted children (C) (12,23 ± 3,54 years). An OGTT was performed and serum insulin was obtained to calculate the glucose/insulin ratio and the HOMA-index. All had undergone an assessment of weight, height and pubertal status; cholesterol, triglycerides, liver enzymes and serum 25(OH)D were measured at the baseline visit.



Results: Mean 25(OH)D levels were highest in Ob, with a statistically significant difference, respect to C. The BMI level was inversely correlated with vitamin D levels. An important inverse relationship was found when vitamin D levels were compared with basal insulin, GPT, GGT, triglycerides.

Regression Vit D vs BMI (1) and Vit D vs basal insulin (2)



Conclusion

Comparing the vitamin's D concentration with the lipemic and metabolic parameters, largely confirm the few existing data in the literature, that such metabolic alterations are linked to a high prevalence of vitamin D deficiency in obese children.