

Section: EPIDEMIOLOGY

Abstract: EPI-04

Vitamin D measurements in patients cared for by the Brazilian Unified Health System in the municipality of São Bernardo do Campo

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INTRODUCTION: The overall objective of this project was to determine more reliable vitamin D reference values for the Brazilian population across different population groups, considering variables such as age, sex, season, and ultraviolet (UV) exposure. **METHOD:** A total of 201,384 vitamin D measurements from patients in São Bernardo do Campo between 2018 and 2022 were analyzed using the database of the Clinical Analysis Laboratory at Faculdade de Medicina do ABC. Qualitative variables were described as absolute and relative frequencies. Quantitative variables were described using the median, 95% confidence interval, and 25th and 75th percentiles after normality testing (Shapiro–Wilk <0.05). The Mann–Whitney and Kruskal–Wallis tests were used to assess associations between sex, age, and vitamin D levels. Associations between vitamin D levels and independent variables were estimated using univariable and multivariable Poisson regression models, with a significance level of 5%. Data Analysis and Statistical Software for Professionals (Stata), version 11.0®, was used. **RESULTS:** The overall mean was 23.30 ± 9.39 ng/mL. The highest concentrations were observed in the 0-to-9-year age group. The correlation between sex and vitamin D was negative and weak ($r=-0.073$; $p<0.000001$). The analysis showed statistically significant effects of season and UV radiation on serum vitamin D levels ($p<0.0001$). **DISCUSSION:** The positive association between UV radiation and 25(OH)D concentration is consistent with the evidence. Individuals with lower baseline concentrations tend to have a greater response to UV exposure. Children aged 0 to 9 years had the highest mean levels, which may reflect the effect of supplementation recommended by the Brazilian Society of Pediatrics. The progressive decrease with age may be attributed to physiologic changes. The difference between sexes has little clinical magnitude. The seasonal influence was consistent with the literature. **CONCLUSION:** Participants' age and seasonal variation influenced serum vitamin D measurements. Season and UV radiation affected the measurements assessed.

KEYWORDS: Hypovitaminosis; Vitamin D.