

Abstract

Osteoporos Int. 2006;17(8):1133-40.

High prevalence of vitamin D deficiency, secondary hyperparathyroidism and generalized bone pain in Turkish immigrants in Germany: identification of risk factors.

Erkal MZ, Wilde J, Bilgin Y, Akinci A, Demir E, Bödeker RH, Mann M, Bretzel RG, Stracke H, Holick MF.

Third Medical Department and Policlinic, University of Giessen Medical Centre, Germany.

INTRODUCTION: The aim of the study was to determine the prevalence of vitamin D deficiency, secondary hyperparathyroidism (sHPT), generalized bone pain and predictors of vitamin D deficiency in a cohort of 994 healthy adult urban residents (589 males, 405 females; age range: 16-69 years) consisting of 101 Germans, 327 Turkish residents of Turkey and 566 Turkish immigrants living in Germany.

METHODS: The mean (\pm standard deviation) for 25-hydroxyvitamin D [25(OH)D] and bioinactive parathyroid hormone (BioPTH) for the German men and women was 68.4 nmol/l and 26.7 pg/ml, respectively. Turkish residents of Turkey had a mean 25(OH)D and BioPTH of 40.6 nmol/l and 27.5 pg/ml, respectively, whereas Turkish residents of Germany had a 25(OH)D of 38.1 nmol/l and a BioPTH of 35.6 pg/ml.

RESULTS: Vitamin D insufficiency was common among Turkish nationals independent of whether they lived in Turkey or Germany; 75% had 25(OH)D levels of <50 nmol/l. Turkish females had a higher prevalence of 25(OH)D deficiency (<25 nmol/l) than Turkish males: 30 and 19% of Turkish females living in Germany and Turkey were severely vitamin D deficient compared to 8% and 6% of Turkish males living in Germany and Turkey, respectively. With respect to BioPTH levels, 31% of Turkish females and 21% of Turkish males had elevated BioPTH levels in contrast to only 15% of females and 4% of males living in Turkey. Unconditional logistic regression analysis identified the most important predictors for low 25(OH)D levels as sex, body mass index, lack of sun exposure and living at a higher latitude. Additionally, wearing a scarf and number of children were found to be an independent risk factor for vitamin D deficiency in Turkish women living in Turkey and Germany. A strong correlation between low 25(OH)D levels and higher rates and longer duration of generalized bone and/or muscle aches and pains (often diagnosed as fibromyalgia) was observed.

CONCLUSION: Secondary hyperparathyroidism and vitamin D deficiency was found to be common among Turkish immigrants living in Germany, especially in veiled women. Therefore, the monitoring of vitamin D status--i.e. 25(OH)D and PTH--in Turkish immigrants is warranted and once a deficiency is identified, it should be appropriately treated.