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Anthropometric Factors in the Risk of Differentiated Thyroid Cancer in French Polynesia: a Population Based Case-Control Study


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Objective: Our aim was to study the risk factors of thyroid cancer in French Polynesia where one of the world’s highest incidence rates of thyroid cancer is observed.

Design: A case-control study among native residents of French Polynesia included 225 cases of differentiated thyroid cancers diagnosed between 1979 and 2004 (201 men / 24 men) matched to 368 population controls (324 women / 44 men) on the date of birth. Participants under 18 (6 women cases and their 9 controls) were excluded from the analysis. Anthropometric factors, categorized into quartiles among women and according to the median among men were analyzed by conditional logistic regression. Odds ratios (OR) were adjusted for ethnicity, education level, interviewer, height, number of births, and menopausal status.

Results: Risk of thyroid cancer for women in the highest quartile of body mass index (BMI) at age 18 was 2.3-fold higher compared to the lowest quartile. Women in the highest quartile of BMI before diagnosis had a 2.3-fold higher risk compared to the lowest quartile. These results did not depend on ethnicity. Among men, thyroid cancer risks were 4.5 and 7.4-fold higher when BMI at age 18, respectively before diagnosis, were elevated. Individuals who were overweight (BMI=25-29.9 kg/m²) or obese (BMI≥30 kg/m²) at age 18 and before diagnosis had a higher risk compared with those who had a normal BMI both at age 18 and before diagnosis (OR=3.2 for women and OR=3.0 for men).

Conclusions: An elevated height, and elevated weight and BMI at all ages were associated to an increased risk of thyroid cancer among men and women in our study. This study shows the important role of anthropometric factors in the risk of thyroid cancer in Pacific island populations.