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Role of testosterone and estrogen in prostate cancer risk

Isbel García Figueredo, Celia Alonso Hernández, Celia Ma Pereda, Celestino Laborí Carda, Maritza Natalia Candia, Fidel Picans, Santiago Quintero, Ramón Ropero, Lourdes Salles and Antonio Bouzó
Institute of Oncology and Radiobiology, Cuba

Aim: To identify if testosterone, estradiol and PSAT are related to the risk of developing prostate cancer.

Material & Methods: A case-control study was performed in 115 patients with benign prostatic hyperplasia (BPH), prostate cancer and controls, which underwent prostate surgery. The total PSA (TPSA), total testosterone (T) and estradiol (E) were quantified by IRMA kits, with biopsy as reference test. Multivariate logistic regression analysis was performed to evaluate the association with the presence of cancer.

Results: Although statistical differences between cancer patients and patients with BPH and those relative to the control ($P < 0.001$), concerning the three markers, they did not show a high specificity. The T to TPSA ratio and E to TPSA ratio could discern between the three groups of patients with high sensitivity (100% and 94.12%, respectively) and specificity (91.53% and 81.58%, respectively). Multivariate analysis showed an increased risk of cancer in patients with levels of $T < 3$ ng/mL, T to TPSA ratio < 0.29 and $E / TPSA < 0.002642$.

Discussion & Conclusions: The risk of prostate cancer is associated with low levels of T/PSAT ratio and E/TPSA ratio that increase the TPSA specificity. Showing ratios T/TPSA and E/TPSA had high sensitivity and specificity, so they could be considered as prostate cancer risk predictors.

Biography

Isbel Garcia Figueredo is a PhD student and has a Master's degree in Laboratory Science, from Havana University of Cuba. She is a project leader of two projects, at the Institute of Oncology and Radiobiology: "*Hormonal behavior in Prostate intraepithelial neoplasia and Cancer: Its role as tumor markers.*" and, "*New Urine Molecular Tumor Markers to Improve Prostate Cancer Diagnosis*". She has published 12 papers and has been proposed as a reviser in MEDWAVE magazine. She was a member of a scientific board of her institute for five years. She is also, an Assistant Professor of the Medicine Faculty "Manuel Fajardo".

garcfis@infomed.sld.cu

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