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ASSOCIATIONS BETWEEN PSA AND IGF-I, IGF-II, IGFBP-1, AND IGFBP-3 IN BREAST CANCER. H. Yu[1], M.A. Levesque[1], M.J. Khosravi[1], A. Papanastasiou-Diamandis[1], G.M. Clark[2], E.P. Diamandis[1]. ([1]Mount Sinai Hosp, Toronto, Ontario. [2]Univ. of Texas Health Science Center at San Antonio, San Antonio, Texas.)

The growth of breast cancer cells is believed to be associated with the regulation of growth factors, including insulin-like growth factors (IGF-I and IGF-II) and their binding proteins (IGFBPs). IGFBP-3 is a major IGF binding protein which regulates the function of IGFs through blocking of binding of IGFs to their receptors. Prostate specific antigen (PSA) was found to be able to digest IGFBP-3. An inverse relation between serum levels of PSA and IGFBP-3 was observed in prostate cancer patients. PSA and IGFBPs were found in breast cancer cells and both were associated with steroid hormone receptors. In order to examine the associations between PSA and IGFBP-3 or other members of IGF family, we measured with immunoassays the levels of PSA, IGF-I, IGF-II, IGFBP-1, and IGFBP-3 in tumor cytosolic extracts of 200 breast cancer patients. We observed no correlation or association between PSA and IGFBP-1, IGFBP-3, IGF-I, or IGF-II. We found that the level of IGF-II, not IGF-I, was positively correlated with the levels of IGFBP-3 and IGFBP-1. Furthermore, IGF-II and IGFBP-3 tended to be positively associated with poor prognostic indicators of breast cancer such as mutant p53 protein, epidermal growth factor receptor (EGFR), and percentage of S-phase fraction in cells, and negatively associated with steroid hormone receptors (ER and PR). Our findings do not support an association between PSA and IGFBP-3 in breast cancer, but support the view that the IGF family may be involved in the development or progression of breast cancer.