

#3762 Plasma prostate specific antigen levels and prognostic value in patients with metastatic breast cancer following megestrol acetate treatment. Melegos, D.N., Diamandis, E.P., Helle, S.I., Yu, H., Lundgren, S., and Lonning, P.E. *Mount Sinai Hospital, Toronto, ON, University of Toronto, Toronto, ON, Canada, Haukeland Hospital, University of Bergen, Bergen, Norway, Diagnostic Systems Laboratories, Webster, TX, USA, Trondheim University Hospital, Trondheim, Norway.*

We have previously demonstrated that synthetic progestins are strong stimulators of prostate specific antigen (PSA) production by breast carcinoma cell lines. To examine if plasma PSA concentration changes during treatment of patients with the synthetic progestin Megestrol Acetate (MA), and if such changes are related to patient outcomes, we determined the plasma PSA levels in 52 female breast cancer patients with an ultrasensitive PSA assay. Plasma PSA levels increased significantly in 50% of patients who received MA. PSA levels in plasma increased within a few days after initiation of treatment and were dose-dependent. PSA levels declined after MA withdrawal. There were no plasma PSA changes for patients treated with other regimens e.g. tamoxifen or adriamycin. The plasma PSA increases reflect the stimulation of the tumor by MA to produce PSA and the secretion of PSA into the general circulation. Patients who have a significantly increased plasma PSA levels have an approximate 3-fold increase in their relative risk of death during the follow-up period. Multivariate analysis has shown that the increased risk of death in this group is associated, at least in part, to the frequent presence of distant metastasis. Our results indicate that MA treatment induces PSA production in about 50% of breast cancer patients and that this inducibility associates with increased patient mortality perhaps indicating total tumor load at the time of testing.

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