3. Steroid receptors help select treatment for breast cancer patients, W.L. McGUIRE, The University of Texas Health Science Center, San Antonio, Texas

Recently, it has been shown that those axillary node positive patients whose breast tumors lack the ability to bind estrogen (do not have estrogen receptor) have the most rapidly growing tumors and have a very high probability of returning with metastatic disease. Since the response rate of estrogen receptor negative patients to cytotoxic therapy is appreciable, they should be treated with combination chemotherapy. Those patients who have positive axillary nodes and estrogen receptor in their tumors have a somewhat more favorable prognosis since the tumor behaves less aggressively. Since their tumor contain estrogen receptor, they are ideal candidates for adjuvant endocrine therapy, especially one of the new antiestrogen compounds. The routine measurement of estrogen and progesterone receptors provides a rational basis for treatment decisions in advanced breast cancer. Patients whose tumors lack both receptors rarely respond to endocrine therapy and are ideal candidates for combination chemotherapy regimens. Patients with tumors containing estrogen receptor but not progesterone receptor have a low response rate to endocrine therapy (25%) and deserve trials of both endocrine and cytotoxic therapy either in sequence or combination. In those patients with both estrogen and progesterone receptors, the response rate to endocrine therapy is very high (30%) and a good response to endocrine therapy is to be expected.

4. Occupied and unoccupied oestradiol receptors in nuclei and cytosol from human breast tumours, T. THORSEN, Hormone Laboratory, University of Bergen School of Medicine, Bergen, Norway

A solid phase hydroxylapatite (HAP) exchange assay has been used to estimate occupied and unoccupied oestradiol receptors in nuclei and cytosol from 85 human breast tumours. Results have been related to the content of progesterone receptor in the cytosol. Incidence of occupied nuclear receptor was high (91%) in tumours containing both oestradiol and progesterone cytosol receptors and low (47%) in tumours containing oestradiol receptor only. In 13 out of 49 tumours with cytosol oestradiol receptor (21%) no nuclear receptor could be detected. Ten of these were progesterone receptor negative. The results indicate that translocation defects may be present in human breast tumours. In eight tumours that were oestradiol receptor negative and progesterone positive by a conventional dextran-charcoal assay, occupied oestradiol receptor could be detected in the cytosol, and in 6 cases nuclear receptor was present. Seven of these patients were below 50 years of age.

It is concluded that the measurement of occupied or total oestradiol receptor in cytosol and nuclei may be a valuable supplement to existing methods for the determination of hormone dependency in breast tumours.

5. Relationship of estradiol receptors to tissue and serum alpha-lactalbumin and serum prolactin in human breast cancer, A. MOLTENI, R. BAHU, E. FORS, M. MANGKORNKANOK and D. ALBERTSON, Dept. of Pathology, Northwestern Univ. Med. Ctr., Chicago, Ill. 60611

Estradiol (E2) binding activity was studied in 509 primary mammary tumors by the sucrose density gradient method and 38% of them were positive. The highest percent of positive binding (67%) was found in infiltrating lobular carcinoma (CA) and the lowest (17%) in the comedo type of infiltrating ductal Ca. This method correlated well for positive or negative binding activity with immuno-fluorescent techniques. Determinations of E2 receptors in metastatic lymphnodes of breast tumors showed a higher incidence of positive binding (70%) likely due to increased numbers of malignant cells with less necrosis and fibrosis. An indirect immunofluorescence technique was also used in the same neoplasms to detect alpha-lactalbumin (α-LA) and 44% of them were positive. Infiltrating ductal CA had the highest incidence of positive α-LA (63%) while lobular CA had the lowest (7%). Presence or absence of E2 binding activity and α-LA did not correlate. Moreover there was no correlation between high concentrations of tumor E2 receptors and serum concentrations of α-LA and prolactin in the same patients. E2 binding activity was not specific for breast tissues as it was also found in neoplasms of other organs (kidney, thyroid, pancreas) while α-LA was detected only in normal or neoplastic breasts. These results suggested that breast cells with E2 binding activity and those secreting α-LA are likely to be different even when they are histologically indistinguishable.

6. Diagnostic and prognostic methods, E. ENGELSMAN, Antoni van Leeuwenhoek Ziekenhuis, Amsterdam, The Netherlands (see Addendum)

7. Receptor studies and survival in human breast cancer, G. CONCOLINO, A. MAROCCHI, C. D'ATTOMA, G. RICCI, L. CARDILLO[1] and L. PICARDI[2], Istituto di Clinica Medica Generale et Terapia Medica V, Università di Roma; [2]Istituto di Clinica Chirurgica Generale e Terapia Chirurgica I, Università di Roma; [1]Ospedale Regina Apostolorum Albano Laziale, Roma

A comparison has been made between the survival rates in two groups of mastectomized breast cancer patients. All were given radiotherapy, but in one group (22 patients) receptor studies were performed whilst in the other (24 cases) they were not performed.

Oestradiol, progesterone and dihydrotestosterone cytosol receptors were studied by means of agar gel electrophoresis at low temperature or protein sulphate precipitation in