Proffered Papers

Breast cancer: New aspects in surgery and translational research

993 ORAL

Prognostic significance of PS6K in node-negative premenopausal breast cancer patients

J.A. van der Hage[1,2,3], E. Robanus[4], L.J.C.M. van den Broek[2], C. Bosch[4], C.J.H. van de Velde[1], P. Clahsen[2], C. Legrand[3], L. Duchateau[3], M.J. van de Vijver[2,4]. *[1] Leiden University Medical Center, Surgery, Leiden, The Netherlands; [2] Leiden University Medical Center, Pathology, Leiden, The Netherlands; [3] EORTC Data Center, Statistics, Brussels, Belgium; [4] NKI/AvL, Pathology, Amsterdam, The Netherlands*

Introduction: In breast carcinomas, amplification of chromosomal region 17q22-24, which contains the PS6K gene, is observed in approximately 10% of cases. Tumours containing an amplified PS6K gene show overexpression of the PS6K protein. Goal of the present study is to test the prognostic significance of PS6K protein overexpression in relation to other histological- and tumor markers in a cohort of 441 node-negative premenopausal breast cancer patients.

Patients & Methods: 441 node-negative premenopausal breast cancer patients were drawn from a large prospectively randomized adjuvant trial (EORTC trial 10854), comparing surgery followed by peri-operative chemotherapy versus surgery alone. Of these patients, paraffin embedded tumor blocks were collected and a series of 5 μm tissue sections has been prepared from each block. Histologic type and tumour grade were scored for all tumours. The sections had previously been analysed for the expression of ER, PgR, HER-2/neu, Ki67, and p53. For the present study, the sections were stained with an antibody directed against PS6K.

Results: PS6K-expression could be assessed in 430 tumors. High expression of PS6K was seen in 39 tumors (9%). The median follow up period was 11 years.

PS6K-positivity was significantly correlated with lower progression-free survival (PFS) rates (56% vs. 36%, P = 0.012), distant metastasis-free survival (DMFS) rates (44% vs. 26%, P = 0.025), and worse locoregional control (LRR) (28% vs. 13%, P = 0.006). Multivariate testing showed PS6K to be an independent prognostic factor for locoregional control and progression-free survival (RR 2.67, P = 0.003 and RR 1.58, P = 0.06 respectively).

Conclusion: PS6K-expression can be a helpful tool to detect premenopausal node-negative breast cancer patients who are at a high risk for locoregional recurrence as well as distant metastasis after primary treatment.

994 ORAL

Sentinel node biopsy in breast cancer - technical performance is more important than patient selection to avoid false-negative findings

T. Kuehn[1,5], F.D. Vogl[2], S. Pueckler[1], G. Helms[1], H. Schirrmeister[3], J. Kotzerke[3], K. Koretz[4], K. Hilmer[5], R. Kreienberg[1]. *[1] University of Ulm, Dept. of Gynecology, Ulm, Germany; [2] International Agency for Research on Cancer, Lyon, France; [3] University of Ulm, Dept. of Nuclear Medicine, Ulm, Germany; [4] University of Ulm, Dept. of Pathology, Ulm, Germany; [5] Gifhorn District General Hospital, Dept. of Gynecology, Gifhorn, Germany*

Purpose: Sentinel-Node-Biopsy is regarded as a highly accurate staging procedure for breast cancer patients, but the false-negative rate associated with the method hampers the acceptance of lymphatic mapping as a standard procedure in the management of breast cancer. We examined the influence of patient and tumor characteristics as well as the impact of variations in the technical procedure on the false-negative rate.

Methods: In a national prospective multi-center trial, data from 1124 patients with breast cancer were recorded between August 1997 and March 2001. In all patients sentinel node biopsy was performed prior to axillary clearing. Twenty-two centers with a total of 89 surgeons participated in the study. Surgeons were free in the choice of the lymphography technique. A specific learning phase was not required.

Results: One or more sentinel nodes were detected in 958 patients (85.2%), of whom 353 (36.9%) had axillary lymph node invasion. Sentinel node biopsy had a sensitivity of 91.8%. Twenty-nine patients (8.2%) were falsely classified as negative.

The number of performed cases (learning effect) influenced the detection rate, but not the false-negative rate. In patients with a false-negative result, the number of detected sentinel nodes was significantly lower than in patients with correctly predicted positive nodal status (mean 1.6, median 1 vs. mean 2.6, median 2, respectively; p=0.004). For comparison, in the group of N0 patients, the mean number of detected sentinel nodes was 2.2 and median 2. The false-negative rate was independent of patient and tumor characteristics (age, menopausal status, tumor size and site), and of the lymphographic technique (blue dye vs. scintigraphy vs. combination of both).

Conclusion: In our large cohort, no specific characteristic of patients or the tumor could be identified that influenced the success rate of sentinel-node-mapping. Our finding of patients with false-negative results having significantly less detected sentinel nodes than patients with correct staging, suggests that overlooked sentinel nodes are the major reason for false-negative results. This emphasizes the importance of an accurate technical procedure for lymphatic mapping in breast cancer patients.

995 ORAL

Is breast conserving surgery a risk factor in young breast cancer patients?

N. Kroman[1,2], H. Holtveg[3], J. Wohlfahrt[1], H.T. Mouridsen[2], M. Melbye[1]. *Danish Breast Cancer Cooperative Group; [1] Department of Epidemiology Research, Danish Epidemiology Science Centre, Statens Serum Institut, Copenhagen; [2] Rigshospitalet, Copenhagen; [3] Department of Breast Surgery, Hørsholm Hospital, Denmark*

Introduction: Local recurence after breast concerving treatment (BCT) is more common in young women than among middle-aged and older patients. It is unknown whether BCT compared to mastectomy is a prognostic factor regarding survival among young patients.

Materials and Methods: We used a population-based registry which since 1977 has collected detailed information regarding clinical and histopathological presentation, surgical treatment, postoperative therapy and follow-up status on Danish women with breast cancer.

Results: Overall, 10,356 premenopausal patients aged under fifty years with primary breast cancer were included in the study. We performed a multivariate analysis including tumor size, nodal status, histologic grading, years of treatment, and surgical treatment. Women who underwent mastectomy were chosen as reference. No increased risk of dying were revealed in women receiving BCT < 35 years, 35–39 years, 40–44 years, or 45–49 years at diagnosis.

Conclusion: Our study indicates that BCT does not confer an increased risk of death in young breast cancer patients despite the observed increased risk of local reccurence.

996 ORAL

Array comparative genome hybridization (aCGH) of high risk breast cancer reveals ERBB2 and MYC coamplification

J.D. Brenton, Y. Diago, G. Calagy, C. Caldas. *University of Cambridge, Department of Oncology, Cambridge, UK*

Purpose: Gene amplification is an independent risk factor for progression in breast cancer. To identify new determinants for prognosis we profiled 13 high risk breast cancers with comparative genome hybridization arrays containing 60 candidate oncogenes.