Proferred Papers Sessions

PP-4. Screening — Epidemiology — Imaging Technics (September 12)

ORAL PRESENTATIONS

PP-4-1 Influence of Mammographic Patterns on Breast Cancer Screening Performance

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Dense breast patterns are said to complicate the detection of tumours by mammography. On the basis of the outcomes of 93,812 screening examinations it was studied whether the performance of the Nijmegen breast cancer screening programme differed for women with dense (> 25% of the breast composed of densities) and women with lucent patterns (≤ 25% densities). In the period 1975–1982, the performance in dense patterns was inferior to that in lucent patterns: the proportions of screen-detected tumours among all tumours were 55% and 73%, respectively. Moreover, the screen-detected tumours in dense patterns were larger at diagnosis and the survival of the patients concerned was worse: the 10-year survival rate was 73%, versus 83% for patients with lucent patterns. Difficulties in reading dense patterns also emerged from a lower predictive value of a positive screening test: 29%, versus 48% in lucent patterns. However, with the improvement of the mammography technique in 1982, these differences disappeared to a large extent; the prognosis of tumours detected in dense patterns was no longer worse than that of tumours detected in lucent patterns.

PP-4-2 Radiation Risk of Mammography Related to Benefit in Screening Programs: A Favourable Balance?

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The objective was to estimate the number of breast-cancer deaths induced by low dose radiation, compared to the numbers prevented in breast-cancer screening programs with various age-groups and intervals.

A computer simulation-model on the natural history of breast cancer was used, combined with a model from the National Research Council's committee (BEIR-V) on induced breast-cancer mortality from low levels of radiation. The improvement in prognosis due to screening was based on the results of the Swedish overview of the randomized screening trials for breast cancer and the performance of screening in the Netherlands.

For the national screening program in the Netherlands (age group 50–69, 2-year interval, 2 mGy per view) the balance between the number of deaths induced versus prevented is favourable; 1:242. Expanding screening to the age-group 40–49 with a 1- or 2-year interval the balance would be less favourable: 1:66 and 1:97, respectively. To save 8 extra deaths from breast cancer one is expected to be induced by radiation in these scenarios, compared to the Dutch program. If screening is equally effective in young as in women aged 50–69, the marginal value was 1: ± 30.

For screening under the age of 50 the balance in the number of breast-cancer deaths prevented versus induced might not be that favourable, although confidence intervals are wide.

PP-4-3 Reduction of Breast Cancer Mortality Due to Mammographic Screening of Elderly Women

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The effect on breast cancer mortality of mammographic screening in women aged 68–82 years was studied prospectively. In the Nijmegen screening programme, which had started in 1975 with biennial one-view mammography, some 7000 women born in the years 1895–1909 were included from round 2 onwards (1977–78). Up to December 31, 1990, 174 cases of breast cancer had been diagnosed. 40 of these patients had died from the disease. The control population consisted of women from the same birth-cohort from Arnhem, a neighbouring city without population screening. Date of entry in the study was 1-1-1978. In Arnhem, 51 out of 183 patients had died from the disease. In the periods 1978–1981, 1982–1985 and 1986–1990, the ratios of the Nijmegen and Arnhem breast cancer mortality rates (RR) were 1.44 (95% CI = 0.67–3.10), 0.81 (95% CI = 0.37–1.79) and 0.53 (95% CI = 0.27–1.04), respectively. In the years 1975–1990, the incidence of breast cancer was slightly lower in Nijmegen than in Arnhem, but the difference was too small to explain completely the reduced breast cancer mortality. The conclusion is that mammographic screening of women over age 67 may yield a 30–35 per cent reduction of the breast cancer mortality rate after 10 years.

PP-4-4 The Yield of an Intensive Follow-Up Program for Women at Increased Risk for Breast Cancer

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Aim. To determine of what method and in what stage breast cancer is diagnosed in women with an increased risk for breast cancer — including family history — who were followed according to an intensive control scheme.

Method. Retrospective analysis of 112 patients with breast cancer diagnosed while on periodical follow-up (semi-annual physical examination and annual mammography). Reasons for follow-up within protocol were: premalignant lesion in former biopsy (ADH, lobCIS): 25 patients (22%), family history (2 or more first degree relatives with breast cancer): 43 patients (38%), previous biopsy with proliferative benign lesion: 44 patients (40%). Mean follow-up time to breast cancer diagnosis was 80 months (range 1–14 years; 54 patients over 5 years). At first visit, 32 women were younger than 40 years and 43 over 50 years.

Results. Malignancy was mammographically detected in 38 patients (34%); 38 patients had self noticed an abnormality which turned out to be breast cancer, and in 36 patients (32%) the tumour was detected by clinical palpation at routine physical examination.

The clinical tumour size was ≤ 2 cm in 49 patients (45%), ≥ 2 cm in 31 patients (27%) and clinically occult in 23 (21%). On histology in situ carcinoma was found in 15 patients, a tumour ≤ 2 cm in 58 and ≥ 2 cm in 36 patients. Lymph node metastases were found in 41 patients (37%). Stage grouping according to histology was as follows: stage 0 = 13%, stage I = 37%, stage II = 43% and stage III = 6% (unknown 1%). The p-stages did not differ between the respective à priori risk groups: 52% of the patients with previous marker lesions (high risk) were diagnosed in p-stage II/III (36% pN+), while 42% of the patients with family history (intermediate risk) had p-stage II/III (28% N+) and 55% of women with a low risk, previous benign breast condition (45% N+). After a mean follow-up time of 73 months (range 11–148) 10 patients have metastases, and 7 of these patients died.

Conclusion. Intensive follow-up for increased risk for breast cancer does not lead to an early detection in the great majority of patients. In our relative young group only in 50% cancer was diagnosed in a probable curable stage (pTis-1 pN0). Patients with family history were not diagnosed with earlier stage breast cancer compared to the other risk groups. Apart from regular mammography, patient awareness (i.e. breast self examination) and regular physical examination appears to play a role in the detection of breast cancer.

PP-4-5 Prognosis in Patients with Carcinoma in Situ of the Breast. A Population Based Study in Sweden

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The incidence of Carcinoma in situ (CIS) of the breast is increasing. 1992 it constituted 8.6% of all breast cancers detected in Sweden. The high incidence is to a large extent due to mammography screening. We have studied 3405 patients with a primary CIS of the breast, reported to the Swedish Cancer Registry between 1980–1992. Information of breast cancer