RR 2.7, 95% CI 7.1–1.1) and tumor size (P=0.03, RR 2.8, 95% CI 7.1–1.1), but not the number of removed ALN (P=0.42) as predictor for axillary recurrence. In contrast, in node positive pts. (n=1133), multivariate analysis demonstrated the number of removed ALN as independent significant predictor for axillary recurrences (P=0.002, RR 9.9, 95% CI 2.7–35.3), next to tumorous fixation of ALN (P=0.005, RR 3.6, 95% CI 1.5–8.3).

Discussion: There is no evidence that a low number of removed ALN increases the risk for axillary recurrences in node negative pts. However, evidence suggest that complete axillary dissection should be maintained in node positive pts.

397 POSTER HIGHLIGHT

Prediction of which screen (mammographically) detected breast cancers (SDBC) require chemotherapy: Validation of new index

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Meta-analysis of symptomatic breast cancer trials advises chemotherapy to women less than 70 years of age at high risk of death (i.e. benefit of >1% survival benefit from treatment) but UK screen detected breast cancers (SDBC) (aged 50–65 years) have an overall 95.45% 5 year relative survival. NIH Guidelines (2001) recommend chemotherapy for all cancers >10 mm in size (i.e. 35% SDBC) whereas in 2001/2 only 22% SDBC in the UK received chemotherapy.

To determine which women will benefit from chemotherapy, we have analysed 4195 operable SDBC (aged 50–65 years) treated by NHSBSP surgeons from 1996–1997 and compared standard prognostic factors and the Nottingham Prognostic Index (NPI) with a novel screening index (SI) for the prediction of death from breast cancer. The SI is based on combined scores for grade (1:2:3), size (<1.5 mm = 1, 1.5–2.5 = 2, >2.5 = 3) and nodal status (negative = 1, <4 nodes = 2, >4 nodes = 3). All cases were followed up for a minimum of 5 years (to 31 March 2002) and are part of the British Association of Surgical Oncology Audit Project. Both the Nottingham Prognostic Index and the Manchester Screening Index significantly predicted survival (p<0.001).

	All Cases					
Manchester	1996–97		1996/97 Cases Only			CT use in
SI	N	%	Grade III	Node positive	5-year relative survival (±95% CIs)	2001/2
3	833	(20)	0%	0%	100%	1%
4	1111	(26)	0%	9%	98.5% (97.1–100.0)	6%
5	1090	(26)	20%	25%	96.3% (94.7–98)	22%
6	630	(15)	42%	55%	93.6% (91–96.1)	49%
7	363	(9)	49%	80%	81.1% (78.5–85.7)	63%
8	143	(3)	66%	100%	71.6% (63.4–79.8)	83%
9	26	(1)	100%	100%	57.1% (38–78.3)†	85%

Chi-Squared test for trend (†p<0.001). Index scores identified women at high risk of mortality (score 7–9).

According to the NPI and NIH Guidelines 18 and 40% of SDBC should receive chemotherapy. Our new SI identifies only 13% SDBC women with 5 year survival below 93.6% who would benefit from chemotherapy (scores 7–9). The better survival of mammographically detected breast cancer (aged 50–70 years) suggests that a proportion of the remaining 87% of women with SI scores 3–6 who have received chemotherapy, may have received unnecessary treatment.

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Survival in BRCA1-associated breast cancer: long-term follow-up and prognostic factors

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Introduction: Results of survival studies in BRCA1-associated breast cancer are inconsistent; while most studies suggest an identical or non-significantly worse survival, others find a significantly worse survival as compared to breast cancer patients with sporadic tumours. Reasons for the inconsistencies might include the different impact of the various gene mutations or comparison groups and/or varying control for other prognostic factors. We updated and extended our previous series of BRCA1-associated breast cancer to obtain stable and long-term survival estimates, perform subgroup analyses and assess the impact of the 'classical' prognostic and treatment factors.

Methods: We selected 230 consecutive patients with primary, invasive breast cancer diagnosed within families with a proven germline BRCA1-mutation. All patients were counseled at the Rotterdam Clinical Genetics Department, the year of breast cancer diagnosis was from 1980–2001. Tumor and treatment characteristics and follow-up were extracted from medical files. Endpoints of interest were the occurrence of contralateral breast cancer (CBC), local and distant disease-free (DDFS) and overall survival (OS). Cox Proportional Hazards modeling was used to investigate the joint impact of the classical prognostic as well as treatment factors.

Results: Mean age at diagnosis was 41 years (range 24–82 years); median follow-up 4.9 years (range 0.07–21.4 years). Tumor size was <2 cm in 51%, 65% was node-negative. Estrogen-receptor (ER) status was negative in 74% of the cases whereas 72% had a negative progesterone-receptor (PR) status. Forty-four percent received adjuvant chemotherapy, 7% hormonal therapy. Thirty-nine percent of patients opted for BPSO.

The yearly incidence of metachronous contralateral breast cancer (CBC) was 3.8%; the 5-, 10- and 15-year CBC incidence rate was 16%, 29% and 40%, respectively. Five, 10 and 15-year DDFS was 72%, 62% and 53%, respectively; for OS these rates were 76%, 64% and 61%, respectively. In our previous paper, 5 year-estimates were 49% for DDFS, 63% for OS and 19% for CBC incidence. In the multivariate analysis, independent prognostic factors for DDFS and OS were tumor stage, BPSO and the administration of adjuvant chemotherapy. Factors that significantly influenced contralateral breast cancer rate were age at first breast cancer diagnosis and BPSO.

Conclusions: OS and DDFS in this extended series of BRCA1-associated breast cancer patients appear to be improved as compared to our earlier estimates; the high risk of contralateral breast cancer was confirmed. In addition to tumor stage, the administration of chemotherapy and BPSO are independent prognostic factors. In line with findings of others, we found that BPSO significantly reduced the incidence of a 2nd primary BC in BRCA1-associated breast cancer.

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Hospital caseload and participation to research are determinants of breast cancer outcomes

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Background: Although caseload appears as a critical determinant of performance in many studies, the specificity of this relationship is unclear since volume is often correlated with other aspects of the organization of health services related to proficiency of care. The goal of this analysis was to evaluate the relative contribution of hospital caseload and participation to clinical research to survival in a large population-based cohort of women with breast cancer.

Methods: We selected women newly diagnosed with node-negative breast cancer between 1988 and 1994 among residents of five health regions in Quebec, Canada, and followed them to document adverse events or until December 31, 1999. Information at baseline and at follow-up was collected by chart review, queries to attending physicians, and linkage with several administrative databases. Data were collected on the patient, her disease, treatment received, characteristics of the physician and hospital of primary care, recurrences and deaths. Research activity was defined as collaboration to multicenter clinical trials other than those sponsored by the pharmaceutical industry. Data were analyzed by Kaplan-Meier actuarial method and Cox proportional hazards analysis using a 5% level of statistical significance.

Results: The study population included 1727 women with median follow-up of 6.8 years. For the whole cohort, 7-year survival (95% confidence interval) was 82% (80%,84%). As compared to women treated in large centers (≥100 cases per year) active in clinical research, hazard ratios (HR) of death from any cause were 1.15 (0.56,2.36) and 1.28 (0.90,1.82) among individuals treated in hospitals active in research with 25–49 and 50–99 cases per year. In hospitals not active in research, HR decreased from 1.93 (1.32,2.83) in centers with less than 25 cases, to 1.68 (1.18,2.38) and 1.57 (1.06,2.33) in those with 25–49 and 50 or more cases each year. Both volume and research activity were significant predictors of outcomes, but not independently.

Conclusions: Increasing hospital volume of cases and promoting participation to collaborative clinical trials represent effective strategies for improving survival of women with early stage breast cancer. Better outcomes in patients treated in larger centers are partly explained by these centers' participation to research.