

reported. 185 consecutive cases in women aged <40 compared with 477 cases aged 40–49 and 687 cases aged 50–59. Overall 10 year % survivals were 73, 80 and 82 respectively.

Table 1. Distribution of grade and NPI at presentation (%)

Age	Grade			NPI Group				
	1	2	3	EPG	GPG	MPGI	MPGII	PPG
<40	8	24	69	5	13	24	33	25
40–49	17	30	53	11	17	30	27	14
50–59	24	38	38	19	24	27	17	13

Table 2. Survival by NPI (10 year actuarial %)

	Age		
	<40	40–49	50–59
EPG	100	100	96
GPG	84	96	97
MPGI	78	78	84
MPGII	81	76	64
PPG	49	54	50

Poorer overall survival is due to more grade III and less Grade I cases in young women, placing more into the Poor Prognostic Group. Survival depends on the prognostic factors of the tumour at all ages and young age is not an independent prognostic factor.

Reference: [1] Kollias J et al. Early onset breast cancer. *British J Cancer* (1997) 75; 1318–23.

O-36. Prognosis after local/regional recurrence

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Both local and regional recurrence is known to be associated with a worse survival compared to patients who remain recurrence free. The study aims to quantify the effect of LR and RR on prognosis and identify the factors that influence it.

The prognosis after recurrence was analysed for 1193 patients who underwent mastectomy (Mx) and 1044 that had wide local excision (WLE) between Jan 1990 and Dec 1999. The relative reduction in survival at 10 years observed in women who had a LR or RR was calculated and a multivariate analysis of factors predicting survival after LR or RR was performed.

The relative reduction in survival observed for LR was 40.0% after Mx (48% v 80%) and 27.6% after WLE (63% v 87%). For RR it was 63.4% after Mx (30% v 82%) and 59.1% after WLE (36% v 88%). Independent predictors of survival after LR or RR were disease-free interval (DFI, $p < 0.001$), grade ($p < 0.001$), size ($p = 0.013$) and lymph node stage ($p = 0.015$). 10 year survival with no LR or RR was 86%. 10 year survival according to DFI is shown below.

DFI	LR	RR
<2 yrs	30%	35%
2–5 yrs	53%	18%
>5 yrs	86%	56%

LR and RR are associated with a large relative reduction in survival. This effect is larger for Mx patients than after WLE. Early LR or RR are both predictors of very poor survival.

O-37. Modification of the Nottingham Prognostic Index by nodal status

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The Nottingham Prognostic Index (NPI) has been extensively validated and is widely used to estimate prognosis and guide recommendation for adjuvant therapy. It is based on a proportional hazard (Cox) analysis.

The aim of this study was to devise a separate NPI for node +ve and node –ve cases and assess how these refined indices may impact upon treatment planning.

890 cases (ES), who had no adjuvant therapy treated between Jan 1980 and Dec 1986, and 2238 cases (LS), who had selective adjuvant therapy treated between Jan 1990 and Dec 1999 were used for multivariate analysis of factors predicting survival. In addition to size, grade and lymph node stage, this included vascular invasion (VI) and single node positivity as previous studies demonstrated that these were important prognostic factors for node –ve/node +ve cases respectively, this latter factor not being available in the early series. For 575 node –ve cases in the ES, size, grade and VI were independently and equally significant. The formula of size + grade + VI produced 4 evenly spaced prognostic groups (10-year survival 89%, 67%, 65% and 48%). Compared with the standard NPI, 73 women (13%) changed to a prognostic group that differed in 10-year survival by at least 10%.

For 784 node +ve cases in the LS, size, grade and stage (1 = single node +ve; 2 = 2 or 3 nodes +ve; 3 = 4 or more nodes positive) were independently significant factors. The weighting gave a formula of size + 4 × grade + 3 × stage which produced 5 evenly spaced significantly different prognostic groups (10-year survival 94%, 88%, 73%, 67%, 34%). Compared with the standard NPI, 298 women (38%) changed to a prognostic group that differed in 10-year survival by at least 10%.

Both of these modifications of the NPI may be useful for treatment planning.

O-38. Predicting survival in BRCA mutation carriers

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The management of BRCA mutation carriers is complex but may be aided by a better understanding of risks of breast cancer death for individual women.

Of 23 BRCA1 mutation carriers presenting with breast cancer in Nottingham, 22 were grade 3, 21 were ER negative and 10 were node positive. Mean tumour size was 25 mm. Of 11 BRCA2 mutation carriers presenting with breast cancer, 4 were DCIS, 3 were grade 3, 2 were node positive and 6 were ER positive. The mean size was 30 mm.

Using penetrance data, an average Nottingham Prognostic Index score for a BRCA1 and a BRCA2 cancer and expected effects of adjuvant systemic therapy, risks can be estimated. For instance, a 30 year old woman with a BRCA1 mutation who chooses screening by mammography as her risk management option has a 20% chance of developing breast cancer over the next 10 years. There is approximately a 7–9% chance of devel-