

usually respond to hormonal therapy. Expression of the *cerbB2* oncoprotein is claimed to predict cancers, which recur early and respond poorly to hormonal therapy.

Aims: To detect whether raised serum levels of serum *cerbB2* antigen predicts poor response to hormonal therapy as judged by UICC criteria and to determine the incidence of *cerbB2* expression in primary tumours associated with bone metastasis.

Methods: Serum from 65 women with metastatic breast cancer bone metastasis undergoing hormonal therapy was assessed for *cerbB2* oncogene (EIA, Bayer, UK). In addition paraffin sections of 35 of the 65 women were retrieved and immunohistochemistry performed NCL-CBL11 (Novocastra) antibody to determine *cerbB2* expression. Serum levels of >25 ng/ml were considered significantly raised.

Results: Significantly more women with bone metastases which progressed on hormonal therapy had raised serum levels of *cerbB2* compared to women with stable or responding disease ($p < 0.0001$).

Response	Number	Serum > 25 ng/ml	<i>cerbB2</i>
CR/PR	17	0	2 (12%)
Stable	25	0	4 (16%)
Progressive	23	14 (61%)**	10 (43%)*

Chi square test ** $p < 0.0001$, * $p < 0.05$

Conclusion: Expression of *cerbB2* occurs frequently in bone metastases, which explains progressive disease on hormonal therapy. Raised serum levels of *cerbB2* predict response to hormonal therapy.

O-89. THE INFLUENCE OF OESTRADIOL ON INTEGRIN $\beta 1$ EXPRESSION AND FUNCTION IN BREAST CANCER AND THE EFFECTS OF LONG-TERM OESTROGEN DEPRIVATION

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Introduction: Integrins are transmembrane proteins that play a leading role in tumour metastasis. Breast cancer risk is associated with prolonged exposure to oestrogens. The aims of this study were to (i) assess the effects of oestradiol (E2) on integrin $\beta 1$ expression and function and (ii) evaluate variation in expression of integrin $\beta 1$ during oestrogen deprivation.

Methods: Integrin $\beta 1$ expression was measured on MCF-7 cells incubated in E2 by western blot. Integrin function was measured by cell adhesion to matrix proteins. MCF-7 cells were cultured in oestrogen deficient medium for over 100 weeks and integrin $\beta 1$ expression on these long-term oestrogen-deprived (LTED) cells was measured at regular intervals by western blot.

Results: Overnight incubation in 10^{-7} M E2, resulted in the up-regulation of integrin $\beta 1$ by 1.7-fold, conversely 10^{-11} M E2 down-regulated expression by 29%. The effect of 10^{-9} M E2 on integrin $\beta 1$ expression could be seen as early as 15 minutes, with peak effect at 2 hours. E2 enhanced cell adhesion to both collagen IV and fibronectin, with a significant maximal effect at 10^{-10}

M. Integrin $\beta 1$ expression was significantly up-regulated during weeks 1 to 25 of oestrogen deprivation. During this time the cells were noticeably more difficult to trypsinise during passage. After 25 weeks the cells appeared to adapt to oestrogen deprivation with little or no change in expression between weeks 26 to 109.

Discussion: Cell adhesion is a pre-requisite for successful cell invasion and metastasis. We have demonstrated that E2 has an effect on both integrin $\beta 1$ expression and cellular function. Our data suggest that integrins may play an integral role in the adaptation of tumours to steroid-independence.

O-90. FACTORS AFFECTING COSMETIC OUTCOME AFTER BREAST CONSERVING SURGERY

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120 patients who underwent breast conserving surgery from 1996/97 completed a questionnaire in July 2000 which asked for an assessment of cosmetic outcome on a scale of 1–10 and also included a 15 question body image questionnaire. 100 replies were complete and suitable for analysis. 86% of patients had an excellent or good cosmetic result using the 10 point scale, 81% had good or excellent scores using the body image score. There was a significant correlation between the two scores, $p < 0.0001$. Volume of tissue excised and the volume of the breast excised (calculated by using specimen volume and breast volume determined from the CC mammogram) both correlated with cosmetic outcome ($p < 0.0001$) with the percentage of breast excised correlating better than simple volume. Patients who had more than 12% of their breast excised were significantly more likely to have a poor cosmetic outcome ($p < 0.01$). Patients who underwent axillary sampling had a significantly better cosmetic outcome than if they had an axillary clearance or axillary sampling and radiotherapy, $p = 0.001$. Of the 4 consultant surgeons who performed all but 13 of the operations, 1 had significantly more good or excellent results, $p = 0.026$ and 1 had significantly more poor results, $p = 0.014$. Differences between surgeons were directly related to different volumes of tissue excised between surgeons, $p = 0.006$.

Percentage breast volume excised is the main determinant of cosmetic outcome after breast conserving surgery. As different surgeons remove different amounts of tissue, the surgeon performing the surgery has a significant impact on the final cosmetic result.

O-91. COSMESIS AND SATISFACTION AFTER BREAST CONSERVING SURGERY (BCS) CORRELATES WITH THE PERCENTAGE OF BREAST VOLUME LOST

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Cosmesis after BCS is an important outcome that correlates with