In conclusion, as we state in the paper, these data need to be verified and confirmed on a prospectively collected large case series, in which, in addition to clinical and biological factors, pharmacological ones are also considered. However, the present data, although preliminary and obtained on a retrospective series of cases, are consistent with evidence suggesting a greater benefit from multiple or intensive drug regimens for rapidly proliferating tumours [5–9].

1. Silvestrini R, Daidone MG, Valentinis B, *et al.* Potential of cell kinetics in the management of patients with ovarian cancers. *Eur J Cancer* 1992, **28A**, 386–390.
2. Hill BT. Biochemical and cell kinetic aspects of drug resistance. In Bruchovsky N and Goldie JH, eds. *Drug and Hormone Resistance in Neoplasia*. Vol. 1. *Basic Concepts*. Boca Raton, CRC Press 1982, 21–53.
3. Connors TA. Alkylating agents, nitrosoureas and alkyltriazenes. In Pinedo HM, Longo DL, Chabner BA, eds. *Cancer Chemotherapy and Biological Response Modifiers*. Annual 10. Amsterdam, Elsevier Science 1988, 23–31.
4. Teicher BA, Cucchi CA, Lee JB, Flatow JL, Rosowsky A, Frei III E. Alkylating agents: in vitro studies of cross-resistance patterns in human cell lines. *Cancer Res* 1986, **46**, 4379–4383.
5. Zambetti M, Bonadonna G, Valagussa P, *et al.* Adjuvant CMF for node-negative and estrogen receptor-negative breast cancer patients. *J Natl Cancer Inst Monogr* 1992, **11**, 77–83.
6. Sulkes A, Livingston RB, Murphy WK. Tritiated thymidine labeling index and response in human breast cancer. *J Natl Cancer Inst* 1979, **62**, 513–515.
7. Remvikos Y, Beuzeboc P, Zajdela A, Voillemot N, Magdelenat H, Pouillart P. Correlation of pretreatment proliferative activity of breast cancer with the response to cytotoxic chemotherapy. *J Natl Cancer Inst* 1989, **81**, 1383–1387.
8. Molinari R, Costa A, Veneroni S, Mattavelli F, Salvadori P, Silvestrini R. Cell kinetics and response to primary intra-arterial chemotherapy in patients with advanced oral cavity tumors. *J Oral Pathol* 1991, **20**, 32–36.
9. O'Reilly MS, Camplejohn RS, Rubens RD, Richards MA. DNA flow cytometry and response to preoperative chemotherapy for primary breast cancer. *Eur J Cancer* 1992, **28A**, 681–683.

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c-*erb*B-2/*neu* in Colorectal Carcinoma: A Potential Prognostic Value?

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THE OVEREXPRESSION of c-*erb*B-2/*neu* has been demonstrated in a broad range of glandular tumours including breast, ovary, stomach, salivary, renal, colon carcinomas and adenocarcinomas of the lung (reviewed in ref. 1). Amplification of this gene in breast cancer has been correlated with the stage of disease, relapse and disease-free survival [2]. We report a immunohistochemical study of c-*erb*B-2/*neu* overexpression in 17 c-*erb*B-2/*neu*-positive colorectal carcinomas. The study was carried out on paraffin embedded tumour samples using mouse monoclonal antibody (c-*neu* AB-3, Oncogene Science) raised against carboxy-terminal domain of c-*erb*B-2/*neu* peptide according to the experimental and evaluation procedures that we described previously [3]. A positive correlation was observed between overexpression rate and survival monitored over the 30 months period (Fig. 1). A similar correlation was found between c-*erb*B-2/*neu* overexpression and the time of liver metastases detection. In Dukes A tumours c-*erb*B-2/*neu* status appears to be a better prognostic factor for metastatic potential than CEA [4]. The tumours that showed a weak expression (+) of oncoprotein had a longer metastases-free period than the tumours with strong expression (i.e., 14 compared with 5 months). In the same cases there was a converse relationship between the raised level of serum CEA values and metastases-free period. The results also suggest another potential value of monitoring the c-*erb*B-2/*neu* overexpression in colorectal carcinoma. In Dukes B c-*erb*B-2/*neu*-positive tumours with histologically negative nodes, using c-*neu* antibodies we were able to detect micrometastases in regional lymph nodes. Further monitoring of these patients showed greatly reduced liver metastases-free interval. Although more extensive studies are needed in a larger number of patients, we believe these observations suggest that c-*erb*B-2/*neu* could be a potentially useful prognostic factor in the colorectal carcinoma. They also indicate that immunohistochemical analysis of c-*erb*B-2/*neu* positive tumours can serve as a usful tool in detecting the micrometastases in the regional lymph nodes.

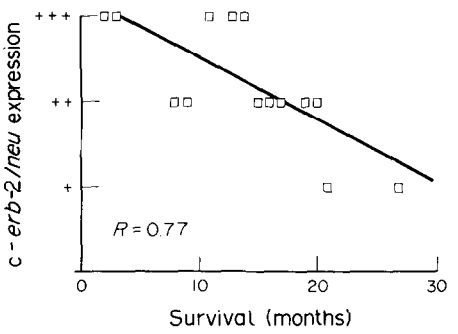

Fig. 1. Correlation between c-*erb*B-2/*neu* overexpression and survival of patients bearing colorectal carcinoma. The categories of overexpression are weak (+), moderate (++) and strong (+++).

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1. Gusterson BA. Identification and interpretation of epidermal growth factor and c-*erb*B-2 overexpression. *Eur J Cancer* 1992, **28A**, 263–267.
2. Slamon DJ, Clark GM, Wong SG, *et al.* Human breast cancer: correlation of relapse and survival with amplification of the HER-2/*neu* oncogene. *Science* 1987, **235**, 177–182.
3. Pavelić K, Pavelić ZP, Denton D, *et al.* Immunohistochemical detection of c-*myc* oncoprotein in paraffin embedded tissues. *J Exp Path* 1990, **5**, 143–153.
4. Hine KR, Dykes PW. Serum CEA testing in the post-operative surveillance of colorectal carcinoma. *Br J Cancer* 1984, **49**, 689–693.