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News

European Society for Medical Oncology

The XV Congress of the European Society for Medical Oncology will be held on 2–5 December 1990 in Copenhagen, Denmark. Information on the congress can be obtained from Heine H. Hansen, Department of Oncology, 5074, Finsen Institute/Rigshospitalet, 9 Blegdamsvej, DK-2100 Copenhagen, Denmark.

European Society for Palliative Care

The European Society for Palliative Care (EAPC) was founded in 1989 to bring together health care professionals throughout Europe who care for the terminally ill. The association's first Congress will be held on 17–19 October 1990 in Paris, France. Congress programmes and abstract forms can be obtained from 'OFCORSE AESP 90', 9 rue Guenot, 75011 Paris, France. Further information about EAPC can be obtained from the European Association of Palliative Care, Vicolo Fiori 2, 20121 Milano, Italy.

Political Role of the European Cancer Leagues

In several European countries cancer research is largely financed by contributions from the national cancer leagues or funds—for instance, the proportion is about 90% in the U.K. and 75% in Denmark. Besides research, other major activities include prevention, early diagnosis and patient support. The national cancer leagues also have the responsiblity to influence public policy. On a European level, the 'Europe against Cancer' programme is a good example.

The Association of European Cancer Leagues (ECL), a group of 18 European national cancer leagues, reached a consensus on several issues at their latest meeting. The ECL recognised the need for nationwide screening for cervical cancer to reduce morbidity and mortality. The importance of quality control, well-trained personnel, and timing and frequency of screening was emphasised. The ECL 'wholeheartedly' supported rapid implementation of national mammographic screening, as long as the programmes are well organised and monitored. Both types of screening require public education to motivate the target population to participate. Environmental carcinogens were recognised as an important worldwide problem. The ECL wants existing knowledge to be converted into practical policies so that the cancer leagues can start to influence governmental policy makers.

Ole Bang
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Copenhagen
Denmark

Letters

Growth Rates of Human Tumours in Nude Mice

Malcolm V. Pimm and Teresa M. Morris

HUMAN TUMOURS can often be grown as xenografts in nude mice, most often subcutaneously. Two tumours may be grown simultaneously at contralateral sites, and even two different tumours can be grown in this way. However, in view of the findings of Auerbach *et al.* [1, 2] that there are anatomical differences in growth rates even of syngeneically transplanted mouse tumours, we have examined whether there are differences in the rates of growth of human tumour xenografts at contralateral sites.

Colon carcinoma Colo-205 [3], gastric carcinoma MKN45 [4], and osteosarcoma 791T [5] were passaged in 6–11-week-old nude mice (Harlan Olac, Oxon, U.K.) by aseptic subcutaneous implantation. Tissue, free of necrosis, was cut into 3 mm cubes (about 100 mg), and pieces were weighed individually and implanted into the dorsal left and right flanks of groups of mice. After 14–21 days mice were killed and tumours (average diameters 1–2 cm) were excised and weighed. The ratio of each tumour's weight to its implanted tissue weight was calculated. The ratio for the left flank was divided by that of the right to give an index of growth advantage.

There were no significant differences between weights of tumour pieces implanted into the left or right flank of any one group of mice (Wilcoxon rank-sum test). But with all tumour types these pieces of tissue grew into significantly larger tumours in the left flank than in the right. With MKN45, tumours in the right flank had increased on average 19-fold compared with the implanted tissue, but 41-fold in the left flank (mean growth advantage 3.42, $P < 0.005$, $n = 10$, Fig. 1). With Colo-205, tumour in the right flank had increased 3.63-fold, that in the left by 5.75 (mean growth advantage 1.85, $P < 0.025$, $n = 6$). In three tests with 791T there were left flank growth advantages of 3.49, 2.23 and 2.08 ($P < 0.025$, $n = 6$ in each test).

Auerbach *et al.* [1, 2] showed gradients in growth of syngeneically transplanted mouse tumours independent of tumour type or sex and strain of mice. Cells injected anteriorly grew faster than those injected posteriorly and there were dorsoventral differences, although there were no differences in growth rates of

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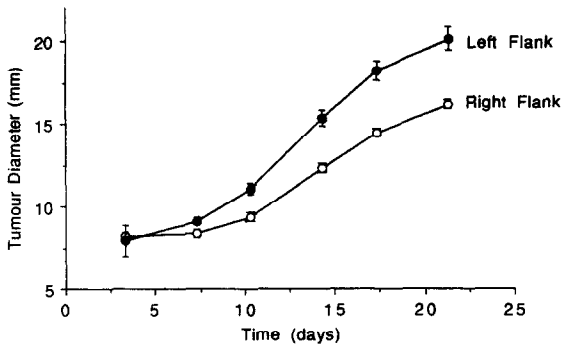

Fig. 1. Growth curves for MKN45 tumour xenografts in left and right flanks of mice [mean (S.E.), n = 10].

tumours injected contralaterally but at the same anteroposterior levels. They suggested that the effect was due to morphogenetic gradients, similar to those believed to control differentiation during ontogeny, and they showed a similar regional difference in the growth of skin transplants [6]. We found a similar effect with human tumour xenografts, and thus we warn others considering the use of such bilateral xenografts.

1. Auerbach R, Morrissey LW, Sidky YA. Regional differences in the incidence and growth of mouse tumours following intradermal or subcutaneous inoculation. *Cancer Res* 1978, **38**, 1739–1744.
2. Auerbach R, Morrissey LW, Sidky YA. Gradients in tumour growth. *Nature* 1978, **274**, 697–699.
3. Semple TU, Quinn LA, Woods LK, Moore GE. Tumour and lymphoid cell lines from a patient with carcinoma of the colon for a cytotoxicity model. *Cancer Res* 1978, **38**, 1345–1355.
4. Motoyama T, Watanabe H. Carcinoembryonic antigen production in human gastric cancer cell lines *in vitro* and in nude mice. *Gann* 1983, **74**, 679–686.
5. Embleton MJ, Gunn B, Byers VS, Baldwin RW. Antitumour reactions of monoclonal antibody against a human osteogenic-sarcoma cell line. *Br J Cancer* 1981, **43**, 582–587.
6. Auerbach R, Auerbach W. Regional differences in the growth of normal and neoplastic cells. *Science* 1982, **215**, 127–134.

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Frequency of Neurological Disease in a Cancer Hospital

A. Hovestadt, Th.C.M. van Woerkom and Ch.J. Vecht

NEUROLOGISTS have an important role in a cancer hospital [1], but the clinical spectrum of neurological disease is not always fully realised. Probably due to both an increase in survival of cancer patients and a higher level of suspicion of neurological involvement, the frequency of neurological problems is increasing [2].

The Daniel Den Hoed Cancer Centre is one of the two cancer hospitals in the Netherlands. Most patients are outpatients. In 1988 and 1989, 7004 new cancer patients, all aged over 18, were referred for diagnosis and treatment; 1105 new patients were seen for neurological evaluation. Their tumour diagnoses were not necessarily made in these years.

Since our purpose was to evaluate the referral pattern, any change in diagnosis after the initial visit was not taken into account.

Table 1 lists for each tumour the total number of patients referred to the hospital in 1988 and 1989 and their relative frequency. The total number of patients referred for neurological evaluation and their relative frequency per tumour is included. However, the referral index (the ratio of the percentage of those referred for neurological evaluation per tumour and of the total number of patients per tumour) showed that patients with breast cancer were referred twice more frequently than were patients with lung cancer.

In breast cancer, pain was often related to vertebral or other osseous metastases and is occurred in patients in whom no other neurological diagnosis could be made. Radiculopathy secondary to vertebral metastasis or brachial plexopathy secondary to tumour involvement or radiofibrosis were frequent neurological diagnoses in breast cancer patients (Table 2). In lung cancer, brain metastasis was the most frequent neurological diagnosis. In head and neck cancer most patients evaluated for pain had recurrence of tumour with or without involvement of cranial nerves. Gastrointestinal cancer was often associated with involvement of the lumbosacral plexus, particularly by recurrence of rectal or sigmoid cancer in patients previously treated with surgery or radiotherapy.

Table 1. Frequency of primary tumours and neurological referral

Tumour diagnosis	All	All	Referral index
Acute leukaemia	122 (1.74%)	33 (2.99%)	1.71
Bladder	375 (5.35%)	17 (1.54%)	0.29
Breast	1465 (20.92%)	327 (29.59%)	1.41
Cervix	189 (2.70%)	37 (3.35%)	1.24
Endometrium	216 (3.08%)	11 (1.00%)	0.32
GI tract	609 (8.70%)	64 (5.79%)	0.67
Head and neck	668 (9.54%)	56 (5.07%)	0.53
Hodgkin's lymphoma	104 (1.48%)	24 (2.17%)	1.47
Kidney	140 (2.00%)	32 (2.90%)	1.45
Lung	1056 (15.08%)	111 (10.05%)	0.67
Melanoma	146 (2.08%)	27 (2.44%)	1.17
Multiple myeloma	77 (1.10%)	26 (2.35%)	2.14
Non-Hodgkin's lymphoma	234 (3.34%)	58 (5.25%)	1.57
Ovary	85 (1.12%)	63 (5.70%)	5.08
Prostate	442 (6.31%)	49 (4.43%)	0.70
Unknown	219 (3.12%)	33 (2.99%)	0.96
Other	857 (12.24%)	137 (12.40%)	1.01
Total	7004	1105	

GI = gastrointestinal.

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