News

Psychosocial Oncology

The European Society for Psychosocial Oncology (ESPO) will hold its fifth conference on 25–26 October 1991, in Florence. For further details, contact Emanuela Barghini, Via di Salvi 12, 50136 Firenze, Italy. Fax (39) 55 578955.

Tumour-directed Therapy in Neuro-oncology

The 2nd International Neuro-oncology Conference was held on 25–26 March 1991 at the Royal Marsden Hospital, London, in memory of Professor H.J.G. Bloom.

The new techniques for localised treatment of intracranial tumours with surgery and radiotherapy assume circumscribed tumour with little extension outside the putative margin as seen on current imaging. This assumption, although correct for benign and some low-grade astrocytic tumours, has been challenged for the majority of glial neoplasms. Experience from biopsies guided by computed tomography (CT) and magnetic resonance imaging (MRI) suggests tumour spread beyond the assumed margin. Dr Kelly (Rochester, Minnesota) reported a study of 40 patients with previously untreated glial neoplasms who underwent CT and MRI-based stereotactic serial biopsy and 319 patients with CT-guided stereotactic biopsy. The area of contrast enhancement on CT corresponded with tumour tissue, neovascularisation and breakdown of the blood–brain barrier. The hypodense surrounding zone in high-grade neoplasms was usually brain parenchyma with oedema permeated by isolated tumour cells. T2 weighted MRI images showed regions that defined tumour cell invasion better than CT. Biopsies of areas normal on CT and MRI beyond the obvious tumour frequently disclosed isolated tumour cells. Dr Burger (Durham, North Carolina), who delivered the 1991 Bloom memorial lecture, reviewed detailed post mortem studies of glial tumours compared with CT and MRI images. In elegant three-dimensional maps of tumour extension, he demonstrated the infiltrative properties of high-grade gliomas. The explanation offered for the variable direction of spread was tracking along fibre pathways. Glioblastomas therefore appeared as locally infiltrative neoplasms asymmetric in three-dimensional profile and the spread depended on the proximity of pre-existing local fibre pathways. Similar extension of tumour cells was reported by Dr Schiffer (Turin). The inescapable conclusion is that current imaging techniques do not define the precise extent of tumour.

Dr Ott (Sutton, UK) reviewed the current role of positron emission tomography (PET) in neuro-oncology which has the potential not only for metabolic studies but also for clearer definition of tumour margin. The most promising studies were with ^{11}C-methionine, which accumulates in tumours in preference to normal brain tissue and the uptake of which relates to the increased metabolic needs of tumour cells, as reported by Professor Ericson (Stockholm). Although of value in high-grade tumours, 20% of neoplasms exhibited normal or decreased accumulation of methionine and these were usually low grade. The role of PET imaging with aminoacids in the definition of tumour margin is not yet fully defined.

Despite the clinicopathological data which would argue against localised forms of therapy, techniques such as stereotactically guided surgery, interstitial radiotherapy and stereotactic external beam radiotherapy (SRT)/radiosurgery have been and continue to be extensively used. Stereotactic localisation of brain lesions has been initially developed for the purpose of precise biopsy of intracranial lesions. Mr Thomas (London) reported a series of 290 stereotactic biopsies with a high diagnostic yield and 10% diagnosis of non-neoplastic lesions, 1% mortality, and 5% morbidity. Tumour excision guided by stereotactic localisation was reported by Dr Kelly. He performed 374 CT and/or MRI-based computer assisted volumetric stereotactic resections of glial and non-glial tumours. This elegant neurosurgical approach allows for neurosurgery with less postoperative neurological deficit than expected for standard technique, despite the radical attempts at tumour excision. However, a survival advantage for this treatment approach has not been demonstrated.

A number of groups reported their experience of interstitial radiotherapy in the treatment of gliomas. The techniques varied from the insertion of a single iodine source to precise volumetric implants with multiple iodine or irridium sources using afterloading technology. Professor Ostertag (Freiburg) and Dr Frank (Bologna) reported a series of selected patients with small low-grade gliomas and Mr Afshar (London) and Mr Sofat (London) largely treated recurrent high-grade tumours. Dr Kumar (Omaha) reported the use of ^{125}I seeds in the management of skull-based tumours, particularly meningiomas. The results, although encouraging in terms of initial tumour control and early survival, are difficult to interpret because of patient selection. They also do not allow for comparison of individual series and the influence of different technologies, such as high-precision dosimetry described by Dr Lulu (Arizona). Interstitial therapy, although technically feasible, will have to be evaluated in a randomised setting to define fully its role in both low-grade and high-grade tumours.

Stereotactic external beam radiotherapy (SRT) is an alternative to interstitial radiotherapy and achieves a similar dose distribution (as described by Dr Thomson, London). Professor Sturm (Cologne), who with his colleagues at Heidelberg developed SRT using a linear accelerator, reviewed this technique from gamma-knife radiosurgery to more recent treatment advances. The current and future technological improvements are aimed at achieving a conformal type therapy of irregularly shaped intracranial lesions and the use of multileaf collimators is a possible option. The optimisation of SRT with 3–4 non-coplanar arcs and possible use of multiple shaped fixed fields was discussed by Dr Graham (London). Other technological improvements, such as high-dose rate radiosurgery (Dr Davey, Toronto) and simplified treatment planning using a personal computer (Dr Lulu, Arizona), were also discussed. Despite the increasing availability of stereotactic treatment technology, Dr Lutz (Arizona) pointed out the possible pitfalls and inaccuracies of the technique and the need for constant vigilance. This was reiterated by Dr Warrington (London) who defined the necessary quality assurance programme and the recognised inaccuracies of the treatment system.

Dr Flickinger (Pittsburgh) and Mr Forster (Sheffield, UK) reported the results of gamma-knife radiosurgery in 115 patients with acoustic neuroma (85 in Pittsburgh and 30 in Sheffield). Because of a high complication rate with single doses of 20–25 Gy

the current doses had been reduced to 17.5–18 Gy to the periphery of the tumour. Nevertheless there is a significant risk of permanent hearing impairment and other neuropathies and the complication rate is related to the tumour size. Longer follow-up will be necessary to assess the long-term control and late complication rate of this technique. Dr Loeffler (Boston) treated 34 recurrent and 24 primary malignant gliomas with single-fraction SRT. The survival results and pathological and radiographic findings were considered similar to those reported for brachytherapy with a 20–25% risk of radionecrosis. It was considered that fractionated treatment may produce fewer long-term complications and should be further explored in the treatment of glial and other intracranial neoplasms. Dr Becker (Tubingen) and Dr Laing (London) reported the use of fractionated SRT in the treatment of glial and other neoplasms. However, early results of phase I/II studies are insufficient as proof of effectiveness and larger scale, hopefully randomised studies in primary and recurrent tumours will be required.

Attempts at delivering systemic therapy more locally to a glial tumour include intratumoral and intra-arterial administration. Intra-arterial chemotherapy is not superior to intravenous administration and, as was stressed, such techniques are toxic and costly with limited patient benefit. An encouraging new technique, which has been successfully used in metastatic neoplastic meningitis, is intrathecal radioimmunotherapy with monoclonal antibodies labelled with ^{131}I (Mr Coakham, Bristol). The only tumours of primary central nervous system origin treated with some success were pineal tumours and medulloblastomas. Monoclonal antibodies against neural cell adhesion molecules labelled with ^{131}I were also injected directly into cystic gliomas in 3 patients (Dr Papanastassiou, Bristol). Dr Brady (Philadelphia, USA) reported early experience of ^{125}I-labelled monoclonal antibody EGF-424 directed against epidermal growth factor receptor. Intravenous infusion has been used as adjuvant treatment in patients with high-grade astrocytoma and a randomised adjuvant study has been proposed.

It seems that high-precision stereotactically guided localised forms of therapy, either as surgical or radiotherapeutic techniques, are here to stay and the technology is becoming widely available. It is possible to advance arguments against the usefulness of these techniques based on the evidence of tumour extent and the potential toxicity of such treatment. The present evidence for effectiveness is only based on phase I/II studies. Nevertheless such techniques may achieve the same results as conventional therapy, possibly with lesser toxicity, and localised high-precision therapy will continue to find a place in the currently available range of techniques. The advocates of such treatments will have to prove in randomised studies that the investment in complex modern technology leads to superior results, both in terms of survival and quality of life.

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European Council for Coordinating Cancer Research

The European Council for Coordinating Cancer Research (ECCCR) was established in Paris in 1990 specifically to take advantage of the rapidly approaching unification of Europe in 1992 and to work with the European Community (EC). Its structure complements the New York based International Council for Coordinating Cancer Research (ICCCR).

The ICCCR/ECCCR concept is the brainchild of Jacques Crozemarie, president of the French Association for Cancer Research (ARC) and Vincent T. DeVita, physician in chief of New York's Memorial Sloan-Kettering Cancer Center. Both were convinced that while there was a distinct lack of funding for the international aspects of cancer research, collaborative efforts held the key to progress in the war against cancer. International collaboration in cancer research has many strong adherents, among them Umberto Veronesi, who was one of the first to understand fully the potential importance of one European council to stimulate and promote joint research.

As president of the ECCCR, Professor Veronesi has attracted a strong board of directors from many of the major European cancer organisations and research centres including Dominique Bellet, Institut Gustave Roussy, France; Anthony Epstein, John Radcliffe Hospital, UK; Gordon McVie, Cancer Research Campaign, UK; Maria Fernanda Mendez-Nunez, Spanish Association Against Cancer, Spain; Jan Ponten, Swedish Cancer Society, Sweden; Adolfo Turano, Institute of Microbiology, Italy; Sabine von Kleist, German Cancer Care; and P.A. Voute, Emma Children's Hospital, Holland.

ECCCR's long-range goals are designed to support and complement the agenda of the EC through scientific action in cancer research, reducing duplication of national cancer research programmes and coordinating financial support for the best cancer research projects.

The EC has set a health agenda for Europe including early detection, treatment and the prevention of cancer. The increasing spirit of cooperation makes this an ideal time for Europeans to join together and make a concerted effort against cancer. Additionally, the board of ECCCR unanimously agreed to adopt and support a policy that focuses on Cancer Prevention. This should make a difference to the general perception of prevention and draw attention to specifics in research or public health policy.

To this end, ECCCR will hold a major conference in September 1992 on prevention which will mirror the cancer prevention conference, "Facts, Maybes and Rumors", held in February 1991 at the NIH campus. This conference was deemed a success by the more than 160 scientists who came from more than 10 countries. These participants recognised the need to organise a prevention conference in Europe in 1992, and felt it would be important to bring to the European and international research communities a concise picture of the current foundation of prevention research. This will also give prevention experts the opportunity to define collaboratively a research agenda.

The steering committee will set specific goals for the conference, but the overall aim is to establish and discuss those "facts" that have been scientifically proven, the "maybes" that are intriguing and under active examination and the powerful "rumours" that are unproven and often cause distorted media and public opinion about cancer. In addition, it is hoped that this 1992 prevention conference will allow for discussions of how the research community can mobilise its knowledge base and expertise in shaping healthcare policy.

Most of ECCCR's ongoing progammes, such as international scientific meetings, international joint research projects, public health policy activities and worldwide communications, are designed with the ultimate goal of generating increased interest