the University of Pennsylvania and the Eastern Cooperative Oncology group, the strategy of twice daily radiotherapy with cisplatin and etoposide produced excellent results with a response rate of greater than 90%. However, patients with mixed histology had a low response rate and a high local failure rate. A randomised trial comparing once daily with twice daily radiotherapy is being conducted in the United States by the Eastern Cooperative Oncology Group and other groups.

The role of prophylactic cranial irradiation (PCI) in small cell lung cancer remains controversial. Most feel that if used, it should be reserved for patients experiencing a complete remission on systemic chemotherapy and the PCI should be given at the completion of all chemotherapy. The major advantage of PCI is that it was shown to reduce subsequent brain metastases. The disadvantages are that there may be central nervous system toxicity and a survival advantage has not been proven. At the present time, randomised trials are being conducted in both the United States and Europe.

For both small cell lung cancer and non-small cell lung cancer, improved radiotherapy techniques with reduced volumes appeared to improve results and reduce toxicity. Increasing the number of fractionations and combining chemotherapy with radiation appears to improve the local control rate in both small cell and non-small cell lung cancers. Additional studies of different methods of combining chemotherapy and radiation therapy are in progress.

Dr James F. Bishop (Department of Hematology and Medical Oncology, Peter MacCallum Cancer Institute, Melbourne, Australia) discussed future directions in the therapy of lung cancer. Substantial improvements in the treatment of small cell lung cancer (SCLC) have only resulted in cure rates which are similar to those for non-small cell lung cancer (about 15%). New treatment directions are: (1) new anti-cancer drugs; (2) dose escalation; (3) the use of haemapoietic growth factors; (4) new methods of combining drugs and radiation; (5) new radiotherapy schedules, and (6) the future role of chemoprevention with new agents against new targets identified by molecular genetics.

Etoposide is a very active drug in SCLC which is clearly schedule dependent. New schedules using continuous oral etoposide have shown excellent activity. Carboplatin is active in SCLC and the combination carboplatin and etoposide is clearly active, well tolerated by older patients and has less non-haematological toxicity than cisplatin and etoposide. The major toxicity of the combination is myelosuppression, which may be modified by cytokines. Other newer agents with activity in lung cancer include ifosfamide and epirubicin. There has recently been some methodology developed to allow early evaluation of new drugs in untreated SCLC. Haemopoietic growth factors now under study in lung cancer include granulocyte–macrophage colony stimulating factor (GM-CSF), granulocyte colony stimulating factor (G-CSF), and interleukin-3 (IL-3). GM-CSF given with carboplatin + etoposide is best given at 5 to 10 μg/kg on days 4 to 11 after chemotherapy which includes etoposide on days 1–3. However, even at this optimal schedule of GM-CSF, this cytokine cannot protect the patient against neutropenia and thrombocytopenia which occurs with double dose chemotherapy.

Another use of GM-CSF or G-CSF is to reduce febrile neutropenic episodes. Growth factors may also be able to allow rapid recovery neutrophils in patients presenting with febrile neutropenic episodes. Future roles of haemopoietic growth factors will be to allow rapid recovery following autologous stem cell transplantation either with peripheral stem cell or bone marrow harvest.

These approaches may allow more extensive evaluation of high dose chemotherapy, with some of the new agents, in lung cancer. In limited SCLC, new programs using concurrent radiation, particulary with cisplatin and etoposide, have produced encouraging results. The optimal drugs, doses and schedules for drug–radiation interaction in SCLC and NSCLC require further study. Novel radiotherapy schedules using multiple daily radiation fractions, and accelerated hyperfractionation hold promise for future improvement in outcome. An area of importance for the future is that of chemoprevention. The identification of a genetic cascade in the evolution of colon cancer has suggested a similar phenomenon may occur in other cancers such as lung cancer. If new targets can be identified in the evolution of lung cancer, new compounds may be able to prevent the evolution of premalignant conditions to invasive lung cancer.

Acknowledgement—This Task Force was sponsored by a generous grant from Bristol-Myers.

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EORTC Invasive Fungal Infections Cooperative Group

A new EORTC Cooperative Group devoted to invasive fungal infections in cancer patients has been recently created. The name of the group is "EORTC Invasive Fungal Infections Cooperative Group". The officers of this group are, Chairman: F. Meunier, Secretary: P. Martino, Treasurer: I. Varthalitis.

The aims of the group will be to conduct, develop, coordinate and stimulate clinical studies for the diagnosis, prevention and treatment of invasive fungal infections in cancer patients. Epidemiological studies including the incidence of various fungal pathogens, the creation of a register of fungemia occurring in cancer patients as well as cost benefit studies will also be encouraged.

Several projects are presently being activated including a therapeutic trial of oropharyngeal candidiasis, and autopsy survey and a study of fungal infections occurring in patients undergoing bone marrow transplantation.

If you are interested in becoming a member of the EORTC Invasive Fungal Infections Cooperative Group, please contact F. Meunier, Avenue E. Mounier 83/Bte 11, 1200 Brussels, Belgium, Tel: 32 (2) 774 16 30, Fax: 32 (2) 771 20 04.