Plenary Lecture

285

Cancer predisposing genes

B.A.J. Ponder. *University Department of Oncology, Oncology Centre, Addenbrooke's Hospital, Cambridge, UK*

The risks of most types of cancer are higher for individuals who already have a close relative with cancer of the same type. Some of this familial clustering is accounted for by the effects of uncommon, strongly predisposing genes which confer lifetime risks of 50% or more on the individuals who inherit them. Although in total these genes account for only a small part of cancer incidence, they are important for two reasons: (1) the genes are proving to have critical roles in the normal control of cell proliferation and development and are an entry to fundamental questions of biology which in the medium to long term will be important for cancers and other diseases and (2) immediately, there is the prospect, for many cancers, of providing DNA-based tests for susceptibility, which raises ethical and practical questions.

Attention has been focussed on the identification of uncommon strongly predisposing genes. In the next decade, the focus of research will shift to the biology of these genes and to the identification of commoner but weaker genes that may account for more cancer overall, and may in some cases be subject to modifying influences that might be used for prevention.