

The Contemporary impact of cancer research on the diagnosis and treatment of cancer: Current and future trends.

John Smyth, MD

The enormous investment in cancer research over the past three decades is now paying off and is changing clinical practice. Outcomes are improving but the workload similarly is increasing most particularly regarding the development of a range of new medicines. There are important financial and political decisions where choices have to be made - this is very challenging! Diagnosis of cancer is now much more subtle and examples will be given of improvements in pathology with immunohistochemistry and imaging with ultrasound, MRI and PET. Developments in cancer treatment comprehensively include progress with surgery, radiation and medicines and it is important to recognise the changing goals of treatment with screening programmes identifying pre-clinical or potentially curable disease. This is particularly relevant to the development of new medicines which may be used over much longer time spans than was the case 10 years ago. The balance between efficacy and safety has to be reassessed in this setting. Our increased understanding of the molecular biology and genetics of cancer has resulted in a range of new medicines effecting the function of oncogenes, signal transduction and tumour suppressor genes. Examples will be shown to emphasise the range of new therapeutic options which are a reality today and will become even more complex in the next decade. Where cancer cannot be cured but can be controlled the medical profession must adjust to the increasing workload in the follow-up of successfully treated patients. Those involved in the financing of health care services similarly must respond to the changing scene in cancer management and face up to the challenging choices that must be addressed in setting priorities when the potential for offering all therapies to all people exceed the realistic possibilities of health care provision - This challenges professionals, patients and the public at large.