

Introduction

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Colorectal cancer is a major health problem: it ranks amongst the most frequent cancers world-wide. The management of colon cancer remains an important challenge. Over the last 15 years our understanding of the epidemiology of the molecular events that lead to colon cancer, of prevention strategies and of the management of colon cancer has improved.

Surgery is today the only curative option for patients who develop colon cancer. After optimal surgical removal, however, many patients develop a recurrence, which often cannot be cured by further intervention. A better understanding of the recurrence pattern and the prediction of which patients are more likely to develop recurrent disease is therefore crucial, as well as the development of the most active adjuvant treatment strategies. Indeed, many lives could potentially be saved with an optimal adjuvant treatment.

Many studies have evaluated molecular markers that might have a predictive or prognostic role in colon cancer. Although several markers have demonstrated clinical efficacy [loss of heterozygosity (LOH), microsatellite instability (MSI), transforming growth factor beta (TGF β) RII mutation and thymidilate synthase (TS)], for various reasons they are not yet used in routine clinical practice in the adjuvant treatment of patients with colon cancer. Every effort should therefore be made to study the molecular markers in adjuvant colon cancer trials and also to implement the growing body of knowledge on the

value of the molecular markers in clinical practice. In the future molecular profiling of tumours may identify individuals who are more likely to benefit from adjuvant therapy and allow the tailoring of individual treatment.

Risk stratification on the basis of the histopathological tumour-node-metastasis (TNM) stage is the basis for adjuvant chemotherapy in colon cancer. Patients with stage II, stage III and resectable metastatic colon cancer therefore require different approaches. Over the last decade the benefit of treatment in stage III colon cancer has been established. The challenge is to increase further this benefit, though the integration of new agents that have already improved the outcome of patients with non-resectable metastatic colorectal cancer in adjuvant treatment. In stage II colon cancer and in resectable metastatic disease, one of the important challenges is to identify those patients who are most likely to benefit from adjuvant treatment.

Systematic evaluation of the risk factors for recurrence, of the predictive and prognostic molecular markers, of the molecular profile of colon cancer and of the various treatment options is therefore warranted in well-designed clinical trials and is the basis for further progress of our knowledge. A better understanding of the optimal adjuvant treatment strategy may further improve the outcome of patients with colon cancer and decrease the mortality associated with colon cancer.