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Clinical applications of tumor suppressor genes and oncogenes in cancer

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Abstract

In the search for new ways to better diagnose and monitor cancer, scientists have turned to oncogenes and tumor suppressor genes. These genes are involved in cell differentiation, communication and proliferation and their alteration is frequently associated with cancer. Such alterations include mutations, translocations, amplifications and deletions. In this review, I give examples of using the detection of such alterations for patient diagnosis and monitoring. The practical examples are restricted to a few cancer types, but the identification of new tumor suppressor genes, like BRCA-1 and BRCA-2, is creating new possibilities for determining cancer risk of individual family members. There is no doubt that the cloning of new genes which predispose to sporadic cancer will lead to the introduction of widespread testing to assess risk and to the application of preventive measures. Copyright © 1997 Elsevier Science B.V.

Keywords: Oncogenes; Tumor suppressors; Cancer diagnosis; Tumor markers; BRCA-1; BRCA-2

1. Introduction

Cancer is one of the leading causes of mortality and morbidity. Early detection of cancer is believed to contribute to better treatment and thereby to the prolongation of a patient's life. One of the goals of physicians and

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