Guanylyl Cyclase C Messenger RNA is a Biomarker for Recurrent Stage II Colorectal Cancer

Reviewers: Li Liu, MD

Précis: In this study, expression of guanylyl cyclase C mRNA appeared to be strongly associated with the presence of colorectal cancer micrometastases that could not be detected by standard histopathologic examination.

Introduction

The decision to administer adjuvant chemotherapy to patients with colorectal cancer is primarily based on tumor staging. Lymph node involvement is a critical component of the staging system. Various methods have been utilized in addition to conventional microscopic exam to increase the sensitivity and specificity of identifying tumor cells in the lymph nodes. Dr. Cagir and his colleagues from Thomas Jefferson University Medical Center examined the expression of guanylyl cyclase C messenger RNA (mRNA) in lymph nodes of patients with node-negative colorectal cancer.

Method

mRNA in lymph nodes from 21 patients with node-negative colorectal cancer who had undergone surgery were analyzed using reverse transcriptase polymerase chain reaction (RT-PCR). Of these, 11 patients had no evidence of disease for 6 or more years after surgery, and 10 developed metastases within 3 years after surgery.

Results

- Expression of guanylyl cyclase C mRNA was found in all patients with recurrent disease but not in those without recurrent disease.
- Carcinoembryonic antigen (CEA) mRNA was found in only one of the 10 patients with recurrent disease.

Discussion

Expression of guanylyl cyclase C mRNA appeared to be strongly associated with the presence of colorectal cancer micrometastases that could not be detected by standard histopathologic examination. This study may help physicians to identify the subgroup of patients with colorectal cancer who may benefit from early administration of adjuvant chemotherapy.