The Need for Routine Monitoring of Cardiac Function in Patients Receiving 5-Fluorouracil Infusion

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Fluorouracil (5-FU) is an antimetabolite that has become the cornerstone chemotherapeutic agent used to treat tumors of the gastrointestinal tract. Although proven to be effective, 5-FU can cause cardiotoxicity, which can be life-threatening. Adverse cardiac-related events induced by 5-FU include angina pectoris, myocardial infarction, supraventricular tachycardia, and atrial fibrillation. Nurses play a crucial role in the routine monitoring of cardiac function by identifying patients at high risk of developing 5-FU–related cardiotoxicity, monitoring patients during treatment, and then implementing specific interventions if 5-FU–related cardiotoxicity is identified or suspected. This article discusses the relevance of 5-FU–related cardiotoxicity, highlights the need for routine monitoring of cardiac function, and discusses methods of early detection and management.

Introduction

74-year-old man with a history of diabetes and hypertension was diagnosed with gastric cancer in 2013. The treatment plan included 5-fluorouracil (5-FU) as a continuous infusion for 48 hours administered on an outpatient basis. On day one of the third course, the patient presented to the emergency department with complaints of substernal chest pain and dyspnea. An electrocardiogram revealed supraventricular tachycardia. The 5-FU infusion was discontinued. Nonpharmacologic measures to revert the patient’s heart rate to normal were employed, but were unsuccessful. The patient was given IV adenosine, which resolved the tachycardia, and he was admitted to the cardiac unit for further monitoring.

Clinical Presentation

In most patients, 5-FU–related toxicity usually occurs during the first course...