

# Management of Acute Decompensated Heart Failure in Patients With Cancer

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**Case Study:** H.M. is a 70-year-old woman with a known history of metastatic breast cancer. In 1995, she underwent a right modified radical mastectomy followed by four years of hormonal therapy with tamoxifen. In April 2001, she was diagnosed with bone metastases and placed on letrozole, zoledronic acid, and chemotherapy consisting of gemcitabine and docetaxel. She experienced severe mucositis, and the chemotherapy was discontinued five months later. In October 2001, she was started on 5-fluorouracil, leucovorin, and mitoxantrone, which she continued until she was diagnosed with possible chemotherapy-induced cardiomyopathy in July 2003.

Cardiotoxicity has been reported in patients treated with mitoxantrone and may occur in patients who have no other cardiac risk factors. Risk increases with cumulative doses (Ghalie et al., 2002). H.M. had no known history of coronary artery disease, myocardial infarction, hypertension, hyperlipidemia, diabetes mellitus, or stroke. She had a prior left heart catheterization, which showed normal coronaries.

In September 2003, she had disease progression and was referred to a cancer center for further management. After restaging tests, she was started on capecitabine.

H.M. initially was seen by the cardiology service after a routine electrocardiogram was done for complaints of “fluttering” in her chest. She was diagnosed with atrial fibrillation with rapid ventricular response and cardiomyopathy with an ejection fraction of 25%–30%. She was admitted to the hospital, and the atrial fibrillation was converted to normal sinus rhythm with amiodarone IV. She was discharged home in stable condition

several days later with amiodarone 200 mg by mouth twice daily, furosemide 20 mg by mouth twice daily, spironolactone 25 mg by mouth daily, lisinopril 2.5 mg by mouth daily, carvedilol 3.125 mg by mouth twice daily, and warfarin sodium 6 mg by mouth daily.

She was followed regularly by the cardiology and oncology services in the outpatient clinics and remained in stable condition until November 2005, when she was admitted to the hospital in her hometown for shortness of breath, fever, and hypotension. She was diagnosed with pneumonia and heart failure exacerbation.

Following her return home, H.M. continued to complain of weakness, fatigue, and shortness of breath. Despite diuretic therapy, she had two- to three-pillow or-

thopnea, paroxysmal nocturnal dyspnea, and lower-extremity edema. In December 2005, she underwent placement of a biventricular pacemaker and implantable cardioverter defibrillator (ICD) for episodes of ventricular tachycardia. The following day, she developed acute pulmonary edema requiring intubation and a weeklong stay in the intensive care unit. She developed renal insufficiency with blood urea nitrogen of 85 mg/dl and creatinine of 2.1 mg/dl. Her local cardiologist advised no further treatment and recommended hospice care. The patient and her family refused hospice transfer and instead returned to the cancer center for further management.

Shortly thereafter, H.M. presented to the emergency room appearing ill and weak and had shortness of breath at rest.

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