

**Title: Cardiotoxicity Induced by Capecitabine and Oxaliplatin in Gastric Cancer
Treatment: A Rare Case of Cardiac Arrest and Cardiogenic Shock.**

Introduction: Combination-based adjuvant chemotherapy utilizing Capecitabine and Oxaliplatin has become a standard approach in gastric cancer treatment. Rare but severe cardiac events such as prolonged QT, cardiac arrest, and cardiogenic shock can result from their use.

Case report: A 45-year-old female with stage II B gastric adenocarcinoma was started on capecitabine-oxaliplatin chemotherapy one week before presenting to the emergency department with weakness. Her vitals were blood pressure 78/56 mm Hg, heart rate 140 bpm, and oxygen saturation 85%. Within minutes of the presentation, she became unresponsive with pulseless ventricular fibrillation. CPR was initiated for cardiac arrest, and she required immediate intubation. She received two shocks, epinephrine, and amiodarone administration with return of spontaneous circulation. Labs revealed serum potassium of 3.1 mmol/L, magnesium of 1.1 mg/dl, troponin 0.46 ng/ml, creatinine 1.74 mg/ml, AST/ALT 2990/1567 IU/L and lactic acid 12 meq/L. An EKG revealed sinus tachycardia with a prolonged QT interval of 556 ms. The combined effects of capecitabine, oxaliplatin, and severe electrolyte abnormalities likely contributed to the QT prolongation. An echocardiogram demonstrated an ejection fraction of 10-15% with extensive wall motion abnormalities. An emergent right heart catheterization showed right atrial pressure of 10 mm Hg and pulmonary artery pressure of 30/18 mm Hg however, cardiac output and index were not recorded. An intra-aortic balloon pump (IABP) was placed. She was admitted to the ICU for treatment of cardiogenic shock requiring norepinephrine, vasopressin, and dobutamine, which were gradually weaned off with the removal of the IABP. A repeat echocardiogram one week later showed a significantly improved ejection fraction of 65%, and she was discharged home.

Discussion:

Capecitabine and Oxaliplatin cardiotoxicity is an exceedingly rare occurrence. Although infrequent, both drugs have been reported to cause QT prolongation. Healthcare providers must recognize the potential QT interval prolongation effects of Capecitabine and Oxaliplatin, leading to potentially life-threatening cardiac arrhythmias.