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Myocardial Infraction in Capecitabine Treated Colorectal Adenocarcinoma with No Signs of Significant Coronary Lesions Angiographically †

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Abstract: In 2021, colorectal cancer was the most frequently diagnosed malignancy in Romania. Although his high incidence, colorectal cancer responds very well to treatment when it is discovered in incipient stages, with a 90% survival rate at 5 years. We will discuss a clinical case of a 70 year old man pT3pN1cMx, colorectal adenocarcinoma diagnosed and operated on in march 2022. Histopathological exam indicated an adenocarcinoma, ulcerated, invasive in the subserosa and the pericolic adipose tissue, and immunohistochemical exam confirmed a low grade(G2) adenocarcinoma, MSS, p53+, LVI+. PET-CT scan revealed no active metabolic lesions susceptible to metastasis. Taking into consideration the age and the multiples comorbidities of the patient: grade III arterial hypertension, type II uncontrolled diabetes, hypercholesterolemia, before surgery it was performed a coronary angiography that indicated a 40-50% stenosis of the LAD, with no signs of significant coronary lesions. The echocardiography exam revealed a LVEF of 55% with no valvular heart disease. Considering the stage of the carcinoma, systemic therapy with CapeOx was initiated. After 4 days following the CapeOx regimen, the patient was admitted to the ER with intense chest pain. The EKG showed an acute inferior myocardial infarction with ST-segment elevation in the inferior leads, and the echocardiography revealed severe diastolic dysfunction of the left ventricle with dyskinesia of the infero-postero-lateral segment, with a LVEF of 30%, grade II mitral insufficiency, grade I tricuspid insufficiency and signs of pulmonary hypertension. Troponins and CK-MB levels were also elevated. A coronarography exam was performed and revealed a 30-40% stenosis of the LAD with no signs of significant coronary lesions. One month after the event, echocardiography shows a LVEF of 45% with no signs of valvular heart disease. After this severe cardiovascular event, a new approach to the treatment was required, Capecitabine treatment was discontinued, and the patient was discussed in the multidisciplinary oncological committee, which considered continuing Oxaliplatin every 3 weeks for a total of 6 months. The patient is currently following this regimen of treatment with no other events. In conclusion, fluoropyrimidine-related cardiotoxicity is an uncommon but potentially lethal side effect. The underlying mechanism is not established but is likely to be multifactorial. In this case report, the patient had multiple comorbidities, but the coronarography exam revealed no underlying significant coronary lesions that could trigger myocardial infarction. According to clinical data, the mechanism that is best supported is coronary vasospasm in the majority of cases with intact coronary arteries. We performed no further paraclinical investigations to support this hypothesis. We also have no data about DPD testing status of the patient, but in clinical studies, the correlation between DPD polymorphism and cardiotoxicity is unclear, only a small percentage of patients with DPD polymorphism experience cardiotoxicity during therapy with fluoropyrimidines. Capecitabine regimen was permanently discontinued due to severe life-threatening toxicity, continuing Oxaliplatin every 3 weeks for 6 months,

with no other events. Taking into consideration the absolute contraindication for any fluoropyrimidines-based regimen, what treatment should be initiated is a case of oncological disease progression?

Keywords: colorectal adenocarcinoma; capeOx; fluoropyrimidine-associated cardiotoxicity; myocardial infarction.

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Conflicts of Interest

The authors declare no conflict of interest.