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Non-immune hemolytic anemia in a patient with advanced breast cancer on capecitabine: A rare adverse event

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Background: Stage IV triple-negative breast cancer has a high mortality rate, and the treatment strategy will be based on the presence of biomarkers, disease burden, need for a response rate, and treatment tolerability. Among the various management modalities and effective treatments, capecitabine is a frequently used option due to its known benefits and relatively good tolerance. However, there are several commonly known adverse effects when using capecitabine, including non-immune hemolytic anemia, a very rare and unexpected side effect. Capecitabine is a form of fluoropyrimidine that is hypothesized to affect the structure of the red blood cell membrane, resulting in the destruction of these cells.

Case report: A 71-year-old woman with stage IV triple-negative breast cancer with bone and skin metastases, negative PDL1, and germline mutations in BRCA1/2, with progression disease at first-line chemotherapy. Capecitabine was started at a dose of 2,000 mg/m²/day, and after two cycles, she developed cytopenia, in addition to increased bilirubin and LDH, leading to the suspicion of hemolysis. She was evaluated by the hematological medical team with complementary tests such as reticulocytes, haptoglobin, and coombs D, the latter negative. Medullary infiltration was ruled out. Capecitabine has been suspended for 15 days, with normalization of tests. When it was reintroduced, there was a new alteration in laboratory tests. In the end, it was decided to permanently discontinue the drug, despite the clinical and radiological response. **Final Comments:** We present a very complex and challenging clinical case of a patient with metastatic breast cancer undergoing palliative treatment. Although the patient's disease was controlled with the use of capecitabine, cytopenia developed with suspected medication-induced non-immune hemolytic anemia. This shows the usual complexity of treating patients with drugs that have both acute and chronic side effects.

Keywords: adverse event; capecitabine; hemolytic anemia.