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Immune-Mediated Colitis with Concurrent Clostridium Difficile Infection

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Abstract

Immune checkpoint inhibitors (ICIs) are widely used for patients with primary lung cancer in the recent years and have better overall survival versus previously used chemotherapy [1]. Some adverse events of immunotherapy, such as diarrhea and colitis, can lead to treatment discontinuation due to the risk of fatal outcome. We present the case of pembrolizumab-induced colitis with concurrent clostridium difficile infection (CDI) in a patient with metastatic non-small cell lung cancer (NSCLC) [2,3]. 58-year-old man was hospitalized due to the symptoms of persisting watery diarrhea and diffuse abdominal pain. Laboratory tests on the day of admission were significant for mild iron deficiency anemia, hypoalbuminemia, hypoproteinemia, leukocytosis, and increased C-reactive protein (68,94 mg/L) [4]. His stool polymerase chain reaction (PCR) test was positive for Clostridium diffcile A and B toxins [5,6]. The treatment for CDI had started with intravenous metronidazole (500 mg every 8 hours) and intravenous vancomycin (1000 mg every 12 hours). Flexible sigmoidoscopy detected edema, erythema, fibrine-covered erosions, loss of vascular pattern in sigmoid colon and rectum. Histological evaluation of the biopsy revealed increased lamina propria cellularity, glandular apoptotic changes, crypt abscesses, shortening, mucin cells depletion and increased number of intraepithelial lymphocyte (Figure 1). Most of them were CD3(+) cytotoxic T-lymphocytes (Figure 2). However, his symptoms failed to improve with antibiotics management. Due to the ongoing treatment with pembrolizumab and the lack of response to the severe CDI antibiotic treatment, the diagnosis of an IMC was made. After excluding an infection with cytomegalovirus, EBV by PCR in colonic tissue, an immunosuppression with intravenous prednisolone 120 mg daily was initiated. His diarrhea began to improve, abdominal pain resolved, and CRP levels decreased in six days. All patients receiving ICIs with diarrhea and infection should be suspected of immune-mediated colitis (IMS).

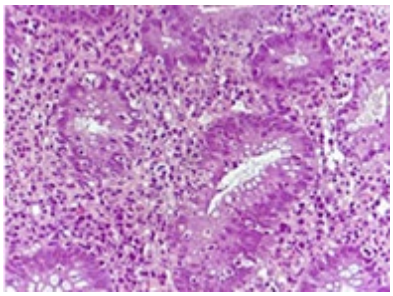

Figure 1: Histological features of active disease in IMC with crypt distortion, increase in intraepithelial lymphocytes, increased laminia propria cellularity, few crypt abscesses with apoptotic bodies (HESx500).

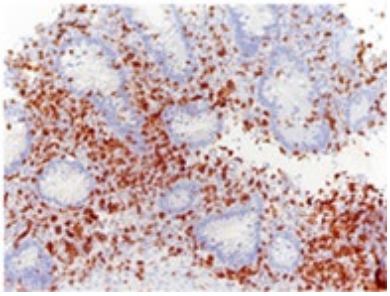

Figure 2: The vast majority of intraepithelial lymphocytes and inflammatory celles in lamina propria were CD3(+) cytotoxic T- lymphocytes (CD3 Immunohistochemical staining x300).

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Received: 01-Oct-2022, Manuscript No. ccoa-22-81198; **Editor assigned:** 03-Oct-2022, PreQC No. ccoa-22-81198(PQ); **Reviewed:** 17-Oct-2022, QC No. ccoa-22-81198; **Revised:** 22-Oct-2022, Manuscript No. ccoa-22-81198(R); **Published:** 29-Oct-2022, DOI: 10.4172/2475-3173.1000134

Citation: Dbar S, Alekperzade S, Sabelnikova E, Akhmadullina O, Bykova S, et al. (2022) The Acetone Extract of Tarchonanthus Camphoratus Inhibits Migration, Invasion and Adhesion of MDA-MB 231 Triple Negative Breast Cancer. Cervical Cancer, 7: 134.