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ACTA MICROBIOLOGICA BULGARICA Volume 36 / 4 (2020)

Use of Lactobacillus and Bifidobacterium Gut Microbiota Counts as an Indicator of Cancer Presence and Chemotherapy Effect

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Abstract Globally, cancer has been estimated to cause about 13% of all deaths in the world, especially in developing countries. Cancer cells are abnormal cells that disrupt the process of cell division, and there are more than 100 types of cancer. The diagnosis of cancer is still the most important factor in the success of cancer treatment. Treatment strategies of cancer may include radiation, chemotherapy, and surgery. This study was conducted to estimate microbiota counts in cancer patients, finding a method for detection and treatment follow up. Lactobacillus and Bifidobacterium counts were determined by qPCR depending on the standard curve from known bacterial counts obtained from probiotics. The main results of this study showed that the Lactobacillus count significantly increased in newly diagnosed cancer patients, while the count of Bifidobacterium decreased compared to the control. Also, chemotherapy led to a decrease in both bacteria counts, which may suggest supporting chemotherapy with probiotics.

Keywords: cancer, microbiota, Lactobacillus, Bifidobacterium, absolute qPCR