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THE IMPORTANCE OF URATE PATHWAY ENZYMES ACTIVITY AND ITS RELATION WITH OXIDATIVE STRESS IN PROGRESSION AND INVASION OF HUMAN COLORECTAL CANCER

Andrej Veljković[1], Jovan Hadži-Djokić[3], Goran Stanojević[2], Branko Branković[2], Aleksandar Skakić[2], Ivana Damjanović[1], Mladen Stojanović[2], Andrija Šmelcerović[1], Gordana Kocić[1]

[1]University of Niš, Faculty of Medicine, Niš, Serbia
[2]University Clinical Center Niš, Niš, Serbia
[3]Serbian Academy of Sciences and Arts, Belgrade, Serbia

Contact: Andrej Veljković
81 Dr Zoran Djindjić Blvd., 18000 Niš, Serbia
E-mail: veljkovicandrej@yahoo.com

Colorectal cancer (CRC) is one of the main reasons for the mortality connected with tumor diseases. There is still a shortage of examination including the influence of urate pathway enzymes in the progressiveness and invasion of CRC, so the present study investigated the role of xanthine oxidase (XO), adenosine deaminase (ADA) and 5'-nucleotidase (5'-NT) activity, concerning TBA-reactive substances (TBARS) as an oxidative stress (OS) marker in progression, also an invasion of human colorectal cancer.

We took tissue specimens from 50 patients with colon cancer, in all four TNM clinical stages of the disease. They were divided into 3 groups: cancer tissue, tissue surrounding the tumor and healthy control tissue group. We made 10% homogenates in which we conducted the study with proper methods.

The activity of ADA and XO in tumor tissue and tissue adjacent to the tumor is statistically higher in comparison to healthy colon tissue. The 5'-NT is not significantly higher in carcinoma tissue. The highest activity of ADA and XO is in T2 and T3 tumor stages. TBARS has the highest concentration in T3 and T4 stages of the tumor.

Presented results suggest that the possible cause of OS in colon carcinoma is high XO and ADA activity. It may include those enzymes in the transformation of the colon tissue, as well as in the progression of CRC. So, the ADA and XO activity might be helpful in determing the margins of colon resection. They can have significance in diagnosis, but in the prognosis of the disease as well.

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