MORPHOLOGY OF THE LARGE INTESTINE UNDER CORRECTION WITH ONOPORDUM STEM INFUSION IN EXPERIMENTAL TESTICULAR CANCER

A.H. Bafoyev, J.J. Bahronov. *Bukhara State Medical Institute, Bukhara, Uzbekistan*

Keywords: cotton thistle, Onopordum, testicular cancer, large intestine, immune cells.

Relevance. Plant-derived agents with antioxidant properties mobilize the natural defenses of the body and exert a protective (organoprotective) effect on organs. Under the conditions of a malignant process, and of the treatment that accompanies it, the large intestine is exposed to systemic disturbances, and its mucosa may respond with atrophic and inflammatory changes. An infusion of the stem of Onopordum (cotton thistle) is taken orally and is described as having immunostimulating and tissue-restoring properties. Nevertheless, its influence on the morphology of the large intestine has not been studied, and this gap limits the rational use of the preparation as a corrective agent in experimental oncology.

Aim. To assess the effect of Onopordum stem infusion on the mucosa of the large intestine in rats with induced testicular cancer.

Materials and methods. Twenty-eight male rats with induced testicular cancer received 0.5 ml of Onopordum stem infusion daily through a metal gastric tube for 10 days. Sections taken from each segment of the large intestine were stained with hematoxylin and eosin. Crypt depth and the numbers of cellular elements were measured and compared with those of the control group.

Results. On visual assessment, no differences were found between the segments of the large intestine. The crypts were thin and deep, with a mean depth of 160.26±3.75 μm. In the descending segment, lymphocytes reached 37.62±1.19, neutrophils 2.96±0.08 and macrophages 14.97±1.08, and the number of plasma cells

increased significantly. In the transverse segment, goblet cells numbered 51.27±3.58 and columnar cells 19.57±2.09 (Table 1).

Table 1. Cellular composition of the mucosa in the treated group (M±SD, units)

Segment	Parameter	Value
Large intestine (mean)	Crypt depth, μm	160.26±3.75
Descending colon	Lymphocytes	37.62±1.19
Descending colon	Neutrophils	2.96±0.08
Descending colon	Macrophages	14.97±1.08
Transverse colon	Goblet cells	51.27±3.58
Transverse colon	Columnar cells	19.57±2.09

In the overall cellular composition, the numbers of macrophages and plasma cells rose by 25.84% and 27.48%, respectively, and mast cells by 38.72% relative to the control (Table 2). Mast cells were located mainly in the lower third of the descending colon, around blood vessels, and were at different stages of functional activity, which indicates that the cells were actively involved in the response of the tissue.

Table 2. Increase in immune cells relative to the control group

Cell type	Increase, %
Macrophages	25.84
Plasma cells	27.48
Mast cells	38.72

Conclusion. Correction with Onopordum stem infusion was accompanied by a reduction of signs of atrophy and inflammation in the mucosa of the large intestine and

by an increase in the activity of immune cells (lymphocytes, macrophages, plasma cells and mast cells). The results give grounds to consider an immunomodulatory and organoprotective effect of the infusion on the large intestine, and they justify further study of this preparation as a corrective agent in experimental oncology.