

## **Prognostic Significance of DNA Ploidy Pattern and Nucleolar Organizer Regions (AgNOR) in Colorectal Carcinoma**

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**Aim.** To investigate the prognostic significance of DNA ploidy and silver stained nucleolar organizer regions (AgNOR), as well as their relation to the histological grade and Dukes' stages of colorectal carcinomas, and the relation of tumor cells proportion in the S-phase and Dukes' stage, histologic grade, DNA ploidy, or AgNOR count.

**Methods.** DNA flow cytometric analysis and AgNOR were performed on 94 surgically removed colorectal carcinomas. The mean AgNOR count was calculated in 200 tumor cells for each case. Survival rates and tests for significance were evaluated using the log-rank test and Cox regression model.

**Results.** There were no significant correlations between the ploidy pattern, histological grade, and Dukes' stage. Diploid tumors had a significantly lower AgNOR count (median 2.5, range 2.1-7.7) than aneuploid (median 6.2, range 2.0-7.9). Dukes' C stage tumors exhibited higher AgNOR count than Dukes' A or B stages. The proportion of tumor cells in S-phase did not correlate with any other parameter. Each of these parameters failed to show any correlation with survival. After dividing the tumors into those with high (>5) and low AgNOR count ( $\leq 5$ ), no correlation was found in the latter group between AgNOR and any other studied parameters, whereas in the group with high AgNOR count correlations to Dukes' stage, DNA ploidy, and histological grade were established.

**Conclusions.** The difference in survival between well, moderately, and poorly differentiated tumors were significant in the group with high AgNOR counts. Dukes' C stage and aneuploid tumors had the worst prognosis.

**Key words:** *cell cycle; colonic neoplasms; DNA, neoplasm; flow cytometry; nucleolus organizer region; prognosis, carcinoma; rectal neoplasms*