

Clinical and morphological pattern of malignant tumors with microsatellite instability

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Background:

- Solid tumors with microsatellite instability (MSI) are highly susceptible to immunotherapy.
- The aim of the study: investigate clinical and morphological features of MSI.

Methods:

- The study included (n=787): 530- colorectal cancer (CRC), 95- endometrial carcinoma (EC), 87- gastric cancer (GC), 20- ovarian cancer, 18- pancreatic cancer, 15- cervical cancer, 15 – esophageal cancer, 7 - cancers of unknown primary site.
- MSI was carried out using fragment analysis (markers: BAT-25, BAT-26, NR-21, NR-24, NR-27).
- Data of preoperative level of CEA and CA19-9 were obtained in 185 patients with CRC.

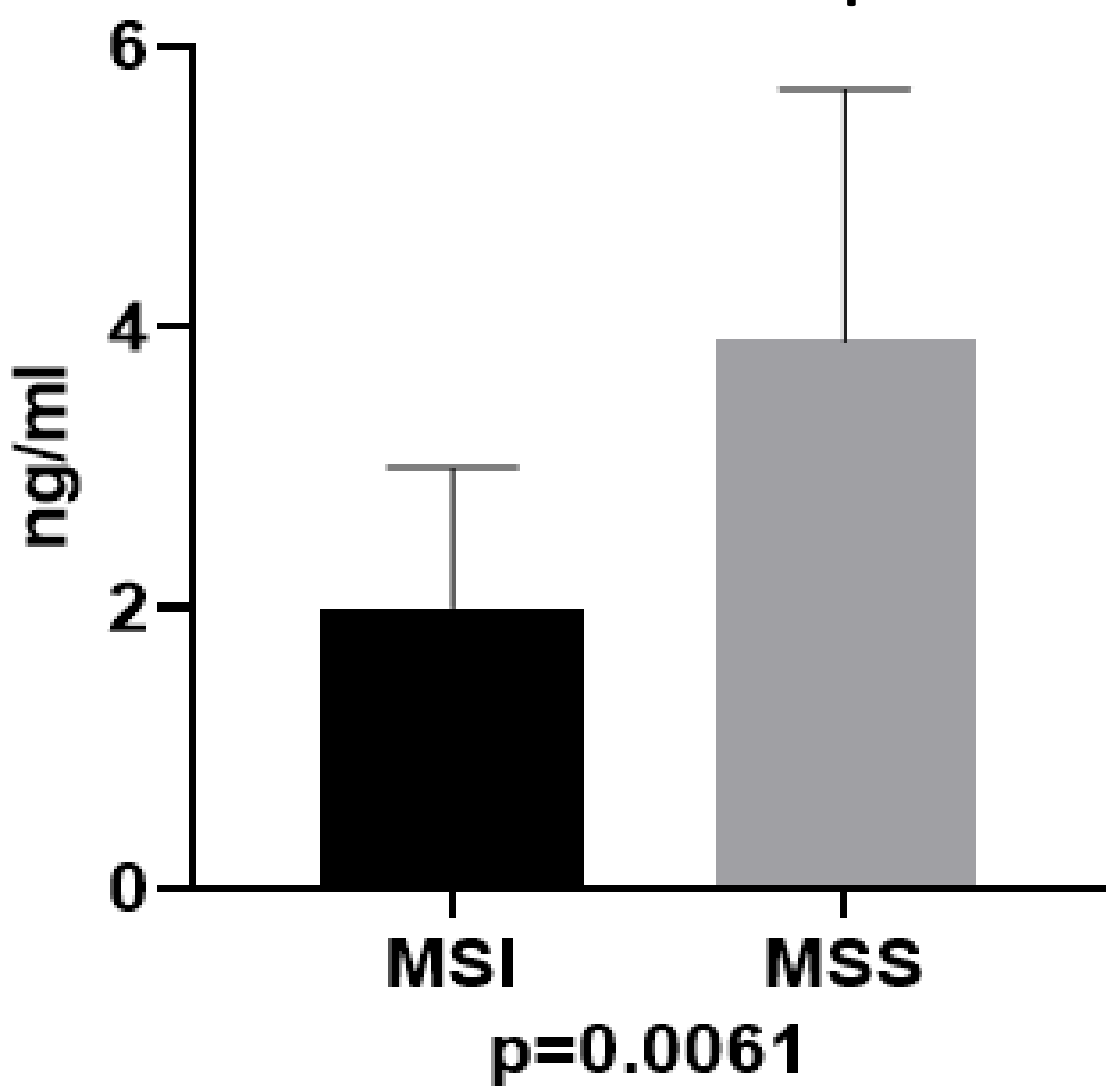


Figure 1. CEA in MSI and MSS CRC.

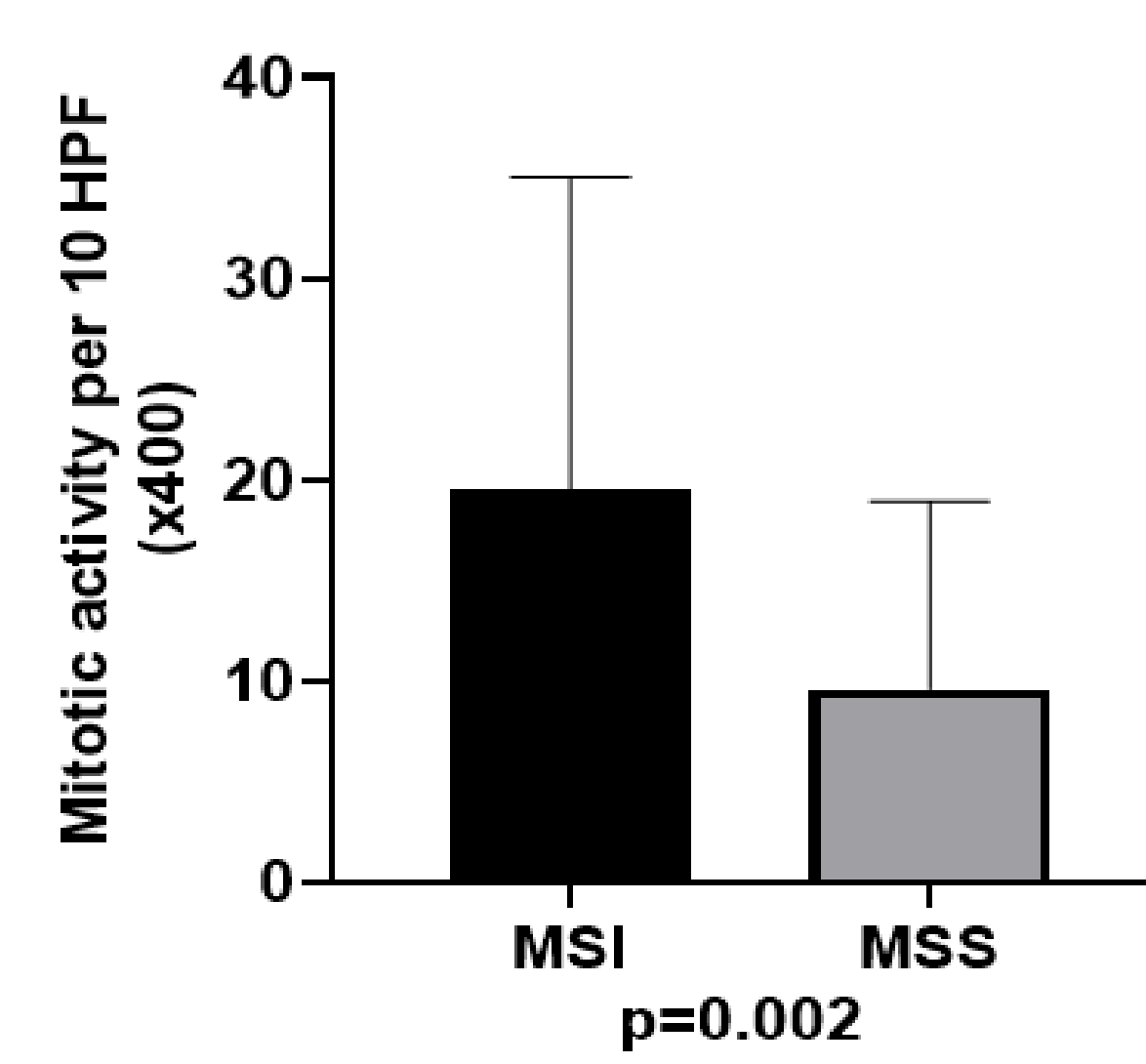


Figure 2. Mitotic activity in MSI and MSS EC.

Table 1. Clinical and morphological features of MSI-positive tumors

Features of MSI	p
Colorectal cancer (n=530)	
Younger age	0.032
Right-sided localization	<0.0001
Multiple primary tumors	0.041
Absence of distant metastases	0.013
High grade tumors	0.0008
Mucinous component	<0,0001
Crohn-like reaction	0.0063
Low preoperative CEA	0.0061
Endometrial carcinoma (n=95)	
Endometrioid adenocarcinoma	0.017
High grade tumors	0.0054
Cribriform growth pattern	0.0084
Tumor-infiltrating lymphocytes	0.0019
High mitotic activity	0.002
Gastric cancer (n=87)	
Female	0.033
Older age	0.001
Distal tumor localization	0.022
High grade tumors	0.012
Tumor-infiltrating lymphocytes	0.009

Results:

- The prevalence of MSI in CRC was 6.8%, in EC- 27.4%, in GC - 6.9%, in ovarian cancer - 5%.
- MSI was not found in other localizations.
- Main findings in MSI tumors presented in table 1.
- A median of CEA was 2.0 ng/ml (interquartile range (IQR): 0.7-3.4; n = 20) in MSI CRC and 3.9 ng/ml (IQR: 1.1-13.1; n = 165) in MSS CRC (p = 0.0061) (Fig. 1).
- MSI vs. MSS CRC: no differences in smoking status, tumor size and presence of diseases associated with an increase of CEA.
- Mitotic activity in MSI and MSS EC presented in fig.2.

Conclusions.

Common features for CRC, EC and GC with MSI were:

- high grade tumors
- presence of tumor-infiltrating lymphocytes.

Conflict of interest. The authors declare no conflict of interest.

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