

Demographic and clinico-pathological characteristics of non-metastatic colon cancers according to the MSS/MSI profile in North-Eastern Tunisia



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Introduction:

Colorectal cancer (CRC) is a heterogeneous disease with multiple epigenetic alterations and different molecular features. Molecular profiling of CRC has the advantage of providing essential information in the pathogenesis of cancer and, also, about prognosis and therapy.

Aim of the study was to compare the frequency, the demographic and clinic-pathological characteristics of non-metastatic colon cancer according to the molecular profile.

Materials and methods:

This was a retrospective study about 71 patients with non-metastatic colon cancer at HABIB THAMEUR hospital in TUNIS from January 2012 to December 2018. Demographic data, clinical and pathological data were assessed.

Results:

According to microsatellite instability status, patients were divided into 2 groups: microsatellite stable (MSS) =49 patients and microsatellite instability (MSI) = 22 patients.

Microsatellite instability was found in 31% patients. More patients in the MSI group than in the MSS group were male (63.6% vs 40.8%), were under the age of 54 years (63.6% vs 34.7% with significant p of 0.023) and has a BMI \geq 30 (18.2% vs 4.1%). The 2 group had a family history of colon cancer (13%). Diabetes was present much more in the MSS group (30.6% vs 18.2%).

Table1: Demographic and clinical data of thepatients according to the MSI status.

| | MSS (n=49) | MSI (n=22) | р |
|--------------------|--------------------------|-------------------------|-------|
| Gender F M | 29 (59.2%) 20 (40.8%) | 8 (36.4%) 14 (63.6%) | 0.075 |
| Age (yr) Median | 57.90 | 52.73 | 0.132 |
| Age < 54 yr | 17 (34.7%) | 14 (63.6%) | 0.023 |
| BMI Median | 23.22 | 24.14 | 0.364 |
| Diabetes | 15 (30.6%) | 4 (18.2%) | 0.274 |
| HTN | 12 (24.5%) | 6 (27.3%) | 0.803 |
| FH CCR | 6 (12.2%) | 3 (13,6%) | 1.000 |

The MSI group was associated with ascending colon location of the tumors (40.9% vs 30.6%). The most frequent macroscopic aspect in the 2 groups was the budding aspect (more than 63%). As well as the stage II of tumor (more than 55%), the low histological grade (81%) and the perineural invasion (31%) were similar in the 2 group. While the lymphovascular invasion was twice as frequent in MSS group than MSI group (40.8% vs 22.7%). The 5-years recurrence was respectively 24.5% in MSS group and 13.6% in MSI group.

| | MSS (n=49) | MSI (n=22) | р |
|--|---|---|-------|
| Location A colon T colon D colon Sigmoid | 15 (30.6%) 7 (14.3%) 22 (44.9%) 3 (6.1%) | 9 (40.9%) 4 (18.2%) 8 (36.4%) 0 (0%) | NS |
| Macroscopic Aspect: Budding Infiltrant | 31 (63.3%) 18 (36.7%) | 16 (72.7%) 6 (27.3%) | 0.436 |
| HG Low Grade High Grade | 40 (81.6%) 9 (18.4%) | 18 (81.8%) 4 (18.2%) | 1.000 |
| LI | 20 (40.8%) | 5 (22.7%) | 0.140 |
| PI | 16 (32.7%) | 7 (31.8%) | 0.274 |
| T2 T3 T4 | 7 (14.3%) 34 (69.4%) 8 (16.3%) | 2 (9.1%) 12 (54.5%) 8 (36.4%) | NS |
| N0 N1 N2 | 33 (67.3%) 11 (22.4%) 5 (10.2%) | 16 (72.7%) 5 (22.7%) 1 (4.5%) | NS |
| Stage I II III | 6 (12.2%) 27 (55.1%) 16 (32.7%) | 1 (4.5%) 15 (68.2%) 6 (27.3%) | NS |
| 5-years recurrence | 12 (24.5%) | 3 (13.6%) | 0.363 |

Table2: Pathological data of the tumors according to the MSI status.

HTN: Hypertension, FH CCR: Family history of colo rectal cancer

NS: not significatif, A colon: Ascending colon, T colon, Transverse colon, D colon: Descending colon, HG: Histologic grading, LI: Lymphovascular invasion, PI: Perineural invasion

Conclusion:

In conclusion, the overall frequency of MSI in our study was 31%. There was no significative difference between the two groups MSI and MSS except the age.