HER2 status in RAS and BRAF wild-type metastatic colorectal cancer – Portuguese study

M.J. de Sousa[1], T. Fraga[1], J. Correia Magalhães[1], R. Basto[1], C. Caramujo[1], J. Paulo[1], P. Jacinto[1], N. Bonito[1], J.P. Magalhães[2], P. Figueiredo[2], G. Sousa[1];

[1]Oncology Deptarment, Instituto Português de Oncologia de Coimbra Francisco Gentil E.P. E. (IPO Coimbra), Coimbra, Portugal; [2]Pathology Department, IPO Coimbra, Coimbra, Portugal

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BACKGROUND

Colorectal cancer (CRC) is the second most deadly cancer worldwide but currently, there are few precision treatments available. Amplification/overexpression of HER2 (HER2+) is a well-established therapeutic target in breast and gastric cancer. HER2+ is present in approximately 5% of CRC and has been implicated in resistance to therapy with anti-epidermal growth factor receptor antibodies. The aim of our study was to evaluate HER2 status in RAS and BRAF wild-type metastatic CRC (mCRC) and its correlation with clinicopathological characteristics and survival outcomes.

METHODS

Single-centre retrospective analysis of RAS and BRAF wild-type mCRC patients undergoing systemic treatment from July 2014 to September 2020. Tissue HER2 status was determined by performing immunohistochemistry (IHC) and/or fluorescence in situ hybridization (FISH) and/or chromogenic in situ hybridization (CISH). HER2+ was defined as either IHC 3+ or IHC 2+ through FISH or CISH +.

RESULTS

HER2- Population: 55 patients	
Age	years
Median	64
Range	33-82
Gender	n (%)
Male	26 (47.3)
Female	29 (52.7)
ECOG Performance Status	n (%)
0	42 (76.4)
1	13 (23.6)
Tumor Location	n (%)
Right-sided	8 (14.5)
Left-sided	47 (85.5)
Metastatic Sites	n (%)
Liver	32 (58.2)
Lung	21 (38.2)
Peritoneal Carcinomatosis	10 (18.2)
Other Location	13 (23.6)

Table 1: HER2 negative (HER2-) population characteristics

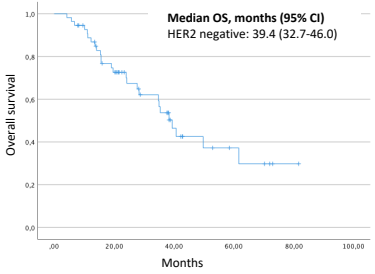

Figure 1. Kaplan–Meier Estimates of Overall Survival (OS) in the HER2 negative population

RESULTS continued

HER2+ Population: 4 patients	
Age	years
Median	65
Range	54-72
Gender	n (%)
Male	3 (75.0)
Female	1 (25.0)
ECOG Performance Status	n (%)
0	3 (75.0)
1	1 (25.0)
Tumor location	n (%)
Right-sided	1 (25.0)
Left-sided	3 (75.0)
Metastatic Sites	n (%)
Liver	4 (100)
Lung	3 (75)
Peritoneal Carcinomatosis	2 (50)
Other Location	4 (100)

Table 2: HER2+ population characteristics

Overall Survival HER2+ Patients	months
Patient 1	18.4
Patient 2	20.4
Patient 3	29.6
Patient 4	30.2

Table 3: Overall Survival in the HER2+ Population

CONCLUSIONS

To our knowledge, this is the first study reporting HER2+ in mCRC patients in a Portuguese population and the HER2+ rate was consistent with previous studies. Our study suggests that HER2+ may potentially be a marker that is able to predict poor prognosis in RAS and BRAF wild-type mCRC. There is potential that with the continued evolution of data in this area, HER2 may become a validated therapeutic target.

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Correspondence should be sent to mariasousa2@campus.ul.pt

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