The Metabolic Syndrome and its Components as Prognostic Factors in Metastatic Colorectal Cancer

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Disclosure of Affiliations, Financial Support, and Mitigating Bias

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Affiliations:

- I have no relationships with for-profit or not-for-profit organizations.

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Background

- There is a lack of prognostic and predictive factors to guide therapeutic decisions.
- Obesity and diabetes mellitus (DM) have been associated with an increased risk for the development of colorectal cancer [1,2].
- The prognostic value of either obesity, DM, or other components of the metabolic syndrome is debatable.

Aim

- We aimed to clarify whether the metabolic syndrome, obesity, DM, hypertension (HTN), and dyslipidemia could provide prognostic information for survival outcomes in patients with metastatic colorectal cancer.

Methods

- We conducted a retrospective chart review on all patients (n = 123) that have been diagnosed and treated for a metastatic colorectal adenocarcinoma over a 6-year period.
- The metabolic syndrome was defined as the presence of at least three of the four (overweight or obesity, DM, hypertension, dyslipidemia) components.
- Overall survival (OS) and progression free survival (PFS) were calculated.

Methods

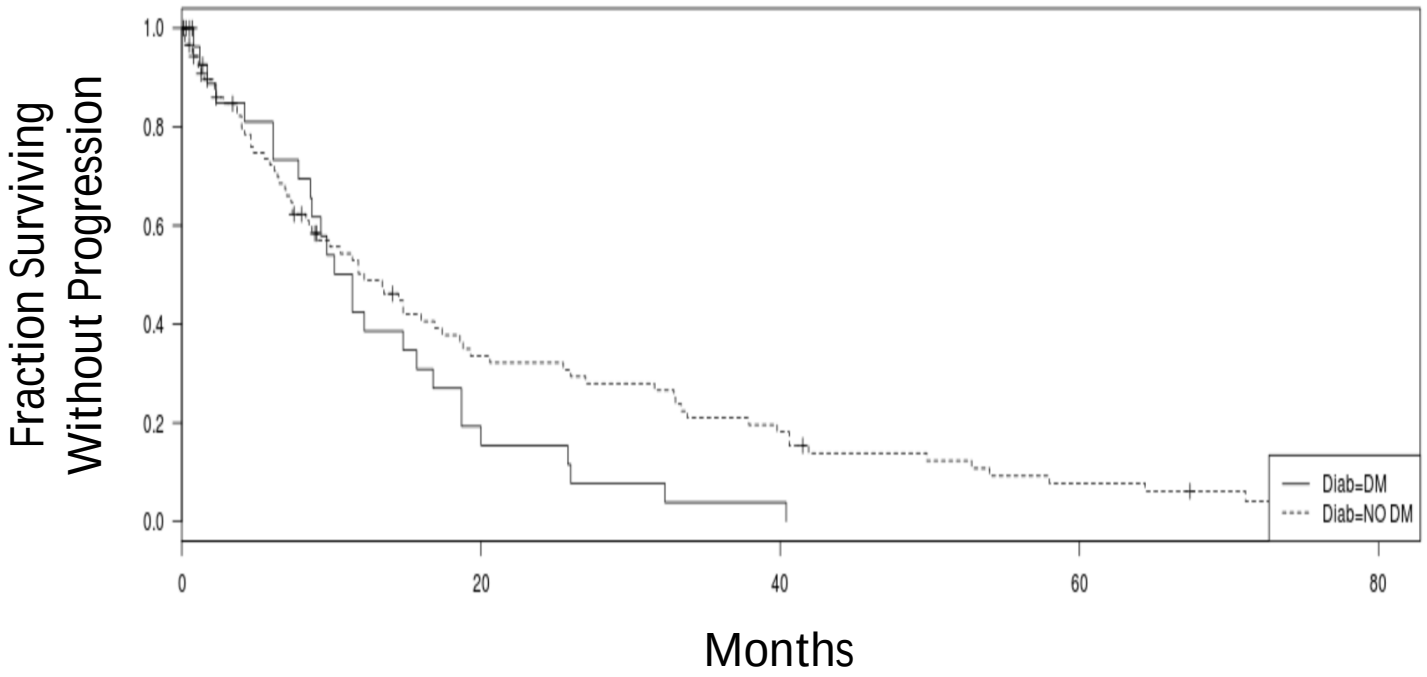
- Survival plots were constructed using the Kaplan-Meier method and compared using the log-rank test.
- The x^2 test and Student's t-test or ANOVA were used to evaluate differences in the groups.
- A Cox regression proportional hazard multivariate analysis was performed to identify statistically significant parameters associated with overall survival (OS) and progression free survival (PFS).

Results

- There were no statistically significant differences between the group of patients with DM and those without DM.
- The presence of DM was associated with the diagnosis of all three other components of the metabolic syndrome and with the syndrome as a whole.

Results

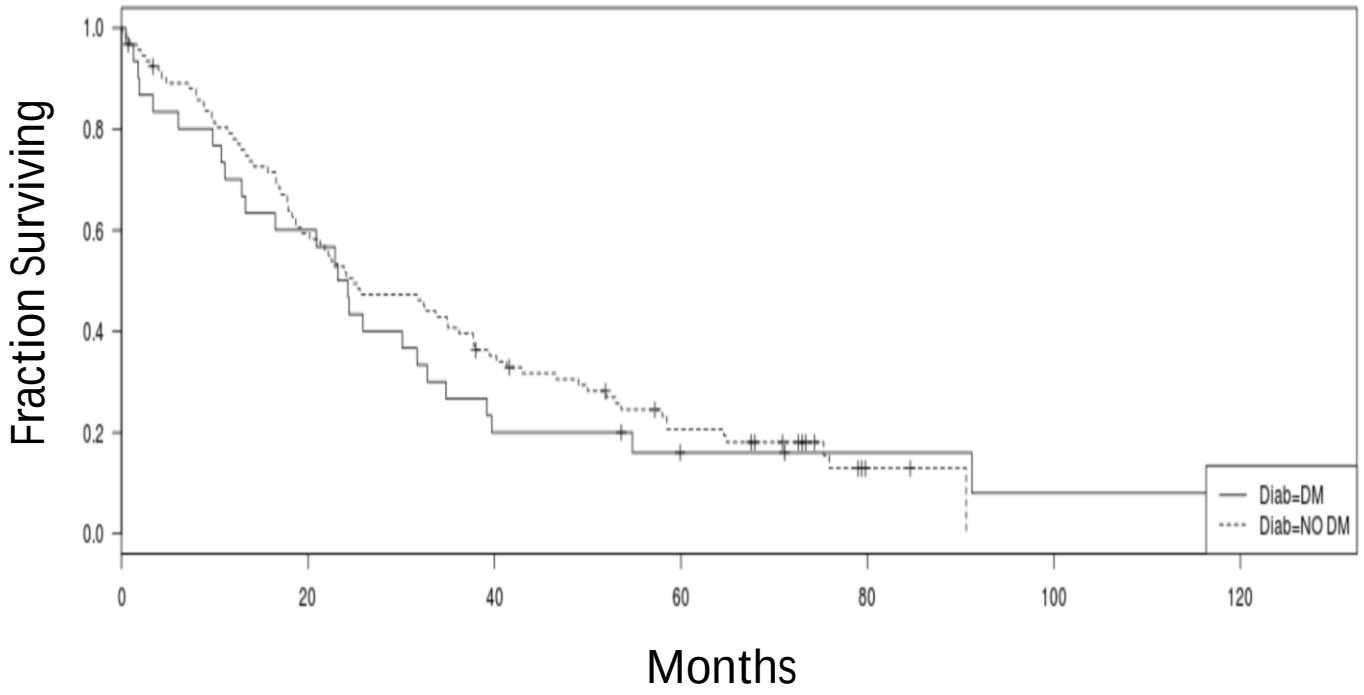
- There was no significant difference in PFS between the diabetic and non-diabetic groups.



(Log-Rank test, p = 0.08)

Results

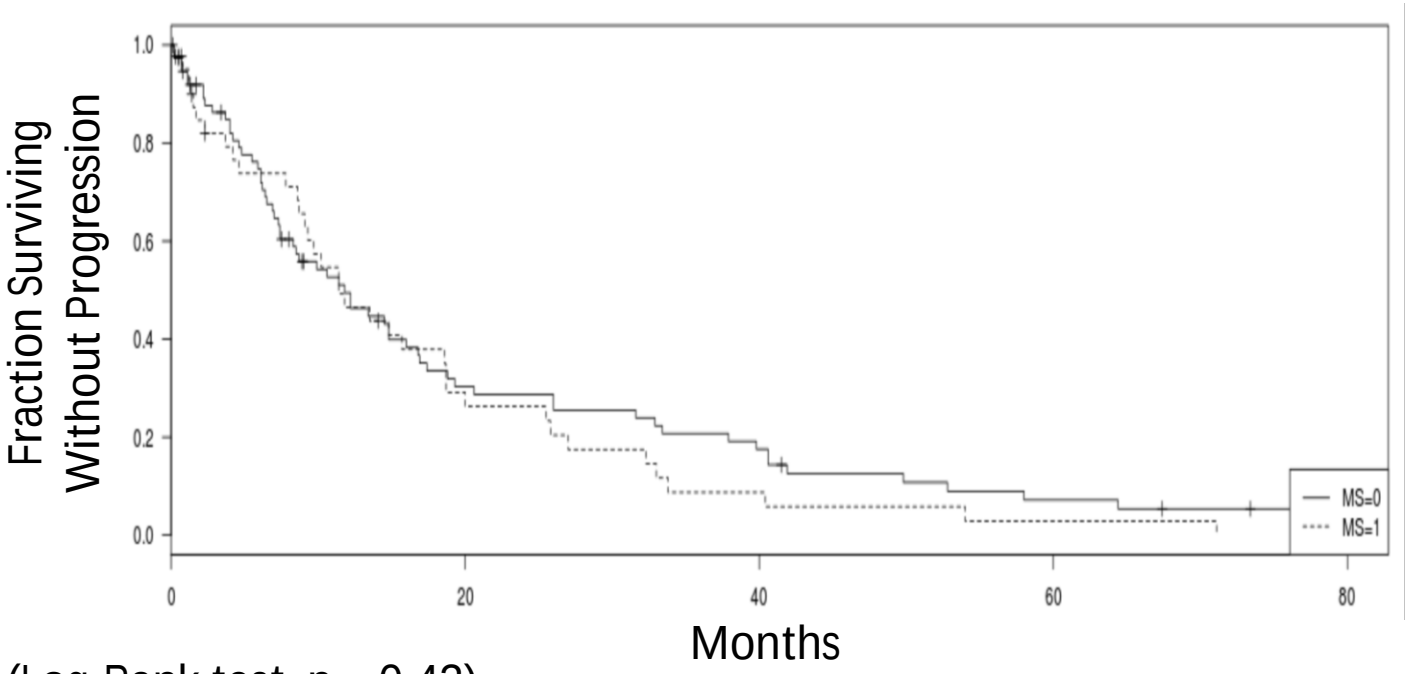
- There was no significant difference in OS between the diabetic and non-diabetic groups.



(Log-Rank test, p = 0.58)

Results

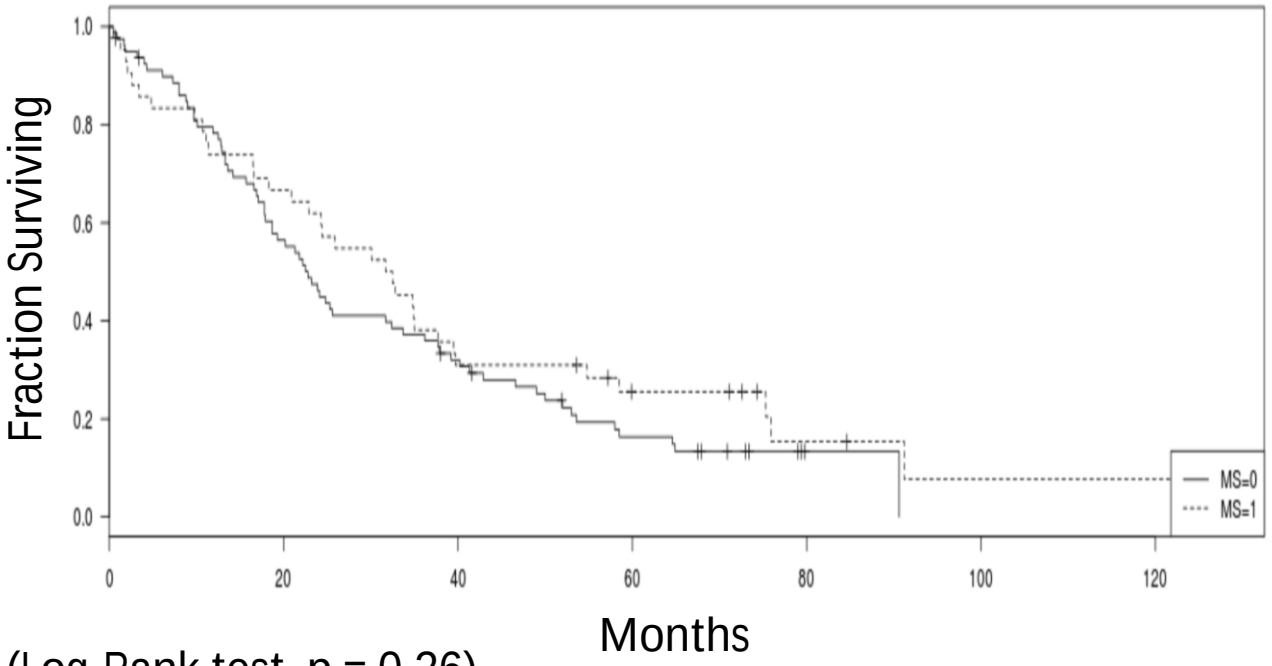
- There was no significant difference in PFS between the groups with and without the metabolic syndrome as a whole.



(Log-Rank test, p = 0.43)

Results

- There was no significant difference in OS between the groups with and without the metabolic syndrome as a whole.



(Log-Rank test, p = 0.26)

Results

Comparison Groups	Outcome	Log-Rank Test p Value
Normal weight versus overweight versus obese	PFS	0.39
	OS	0.52
HTN versus no HTN	PFS	0.77
	OS	0.68
Dyslipidemia versus no dyslipidemia	PFS	0.84
	OS	0.23

Results

- Some studies have shown that the association of BMI with adverse survival outcomes in colorectal cancer is J-shaped [3].
- We performed additional survival analyses using a modified definition of the metabolic syndrome, which did not disclose any difference in PFS or OS between the groups (Log-Rank test, $p = 0.22$ for PFS and $p = 0.72$ for OS).

Discussion

- Neither the metabolic syndrome as a whole nor any of the components are prognostic factors for PFS or OS in metastatic colorectal cancer.
- This adds to the body of evidence refuting a significant effect of these diseases in survival outcomes in metastatic colorectal cancer.
- A smaller effect, especially of the presence of DM in adverse survival outcomes, may not be completely inconsistent with the current data.

Acknowledgements

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References

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