



# LETTER TO THE EDITOR

## COMMENT ARTICLE OF "CLINICOPATHOLOGICAL CORRELATIONS OF VEGF-A AND MMP-7 GENES EXPRESSION IN DIFFERENT TYPES OF COLORECTAL ADENOMA POLYPS"

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### *Dear editor*

In "Clinicopathological correlations of VEGF-A and MMP-7 genes expression in different types of colorectal adenoma polyps", Pezeshkian et al<sup>1</sup> observed that VEGF-A and MMP-7 genes expression can indicate possible progression from colon adenoma to carcinoma.

The role of angiogenic factors in cancer development and in favoring lymphovascular invasion is now widely known as well as the Matrix metallo-proteases (MMPs) are able to degrade extracellular matrix, representing tissue-remodeling enzymes and key elements in tumor invasion and metastasis<sup>2</sup>.

However, in this work the evaluation of expression of VEGF-A and MMP-7 in adenoma-carcinoma sequence is of considerable interest, suggesting new prognostic and risk assessment markers in the view of colorectal cancer prevention based on screening colonoscopy.

The results of the authors were in agreement with other similar series in the literature, highlighting that higher expression of VEGF-A and MMP-7 genes is observed in adenoma polyps respect to control group and increased levels of these genes could be associated to malignancy. Indeed, Ruffolo et al<sup>3</sup> evaluated the expression of VEGF-A messenger RNA through Real-time reverse transcription polymerase chain reaction and VEGF-A immunohistochemical staining in a series of 92 patients with colonic adenoma or cancer patients, submitted to screening colonoscopy or surgery. The results demonstrated that the VEGF-A expression changes along the

colorectal carcinogenesis pathway showing a neat step up at the passage from high-grade dysplasia to invasive cancer.

In addition, Kaklamanis et al<sup>4</sup> have evaluated the immunohistochemical expression of VEGF and p53 in a series of 16 hyperplastic polyps, 35 solitary tubular and tubulovillous adenomas, and 47 cases sporadic colorectal carcinomas arising on the basis of preexisting adenomas. It was observed that VEGF associates with angiogenesis in colorectal cancer, and its pattern of expression in adenomas is maintained in the arising carcinomas, since VEGF positive cancer arose in VEGF positive adenoma, whilst VEGF negative cancer arose in VEGF not expressing adenomas

Qasim et al<sup>5</sup> have evaluated the immunohistochemical expression of MMP-7 of 33 paraffin blocks from patients with colorectal adenoma, comparing with a control group of non-tumorous colonic tissue. They showed that MMP-7 plays an important role in the growth and malignant conversion of colorectal adenomas since it is more likely expressed in advanced colorectal adenomatous polyps with large size, severe dysplasia and villous histology.

The use of such biomarkers joined to other solid markers involved in the adenoma-carcinoma sequence, such as mitochondrial Tu translation elongation factor (TUFM), STAT3, long form leptin receptor, could provide a panel of risk to develop cancer in adenoma. Moreover, the translation of the data to an immunohistochemical approach could provide a manageable test to apply in a screening setting.



## CONFLICT OF INTERESTS

The authors declared no conflict of interests.

## REFERENCES

1. PEZESHKIAN Z, FOROUZESH F, PEYRAVIAN N, YAGHOOB-TALEGHANI M, ASADZADEH-AGHDAEI H, ZALI MR, NAZEM-ALHOSSEINI-MOJARAD E. Clinicopathological correlations of VEGF-A and MMP-7 genes expression in different types of colorectal adenoma polyps. *WCRJ* 2017; 4: e978.
2. EIRÓ N, GONZÁLEZ LO, CID S, ANDICOECHEA A, VIZOSO FJ. Matrix metalloproteases expression in different histological types of colorectal polyps. *Rev Esp Enferm Dig* 2017; 109: 414-420.
3. RUFFOLO C, TOFFOLATTI L, CANAL F, KOTSAFTI A, PAGURA G, POZZA A, CAMPO DELL'ORTO M, FERRARA F, MASSANI M, DEI TOS AP, CASTORO C, BASSI N, SCARPA M. Colorectal polypoid lesions and expression of vascular endothelial growth factor in a consecutive series of endoscopic and surgical patients. *Tumour Biol* 2017; 39: 1010428317692263
4. KAKLAMANIS L, TRICHAS M, AMARANTIDIS K, SPATHARI N, MICHELI A, KARAYIANNAKIS A, CHATZAKI E, GEORGOULIAS V, KAKOLYRIS S. VEGF expression in the colorectal adenoma-carcinoma sequence. *Oncol Res* 2006; 15: 445-451.
5. QASIM BJ, ALI HH, HUSSEIN AG. Immunohistochemical expression of matrix metalloproteinase-7 in human colorectal adenomas using specified automated cellular image analysis system: a clinicopathological study. *Saudi J Gastroenterol* 2013; 19: 23-27. doi: 10.4103/1319-3767.105916.