Pyruvate kinase M2 and its evolving role as a prognostic marker in systemic malignancies besides colorectal carcinomas

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To the editor:

I read with great interest the recent article by Cantillo et al. [1]. Interestingly, recent data suggest that tumor M2-pyruvate kinase may influence prognosis in a number of systemic malignancies besides colon carcinomas.

For instance, there is a close co-relationship between microvessel density as well as tumor prognosis in biliary tract carcinomas and biliary M2-pyruvate kinase levels. Using enzyme-linked immunosorbent assay, biliary M2-pyruvate kinase has a sensitivity of nearly 90 % for identifying biliary tract carcinomas [2]. Similarly, tumor M2-pyruvate kinase plays a role in the evolution of gastric carcinomas. It does this by modulating p65 and Bcl-xL function [3]. Accentuated tumor expression by gastric carcinomas usually points to a poor clinical outcome and a worse prognosis. Higher tumor M2-pyruvate kinase levels are also seen in pancreatic malignancies and may help to distinguish aggressive exocrine tumor types from benign chronic pancreatitis [4]. The sensitivity of tumor M2-pyruvate kinase as a tumor marker in pancreatic malignancies is similar to CA 19.9 and averages to about 95 %.

Chemotherapeutic agents such as cyclosporine attenuate tumor M2-pyruvate kinase expression and thereby mitigate tumor growth in breast malignancies in a dose-dependent manner [5]. Tumor M2-pyruvate kinase can also be used in assessing prognosis in cervical carcinomas. For instance, the stage of the cervical malignancy correlates closely with tumor M2-pyruvate kinase levels [6]. A similar relationship between tumor prognosis and tumor M2-pyruvate kinase levels is seen in pulmonary malignancies. In fact, use of agents such as cisplatin in conjunction with tumor M2-pyruvate kinase

interfering RNA results in enhanced apoptosis and attenuates tumor growth in pulmonary malignancies [7]. The tumor volume is markedly reduced following administration of the combination.

The above examples clearly illustrate the evolving role of tumor M2-pyruvate kinase in oncology and the need for further studies to fully elaborate its prognostic role in other gastrointestinal malignancies.

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