TROP2 expression and its evolving role in tumor pathogenesis in systemic tumors

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To the Editor:

I read with great interest the recent article by Fang et al. [1]. TROP2 may play a major role in tumor pathogenesis in a number of systemic malignancies.

Pulmonary squamous cell carcinomas tend to show increased expression of TROP2. A close association exists between the pathological T stage and TROP2 overexpression in pulmonary squamous cell carcinomas [2]. Poorly differentiated lung tumors tend to exhibit increased expression of TROP2. TROP2 also influences and alters IGF-1R signaling in these tumors [3]. Patients with pulmonary adenocarcinomas, especially those in stage II or III that overexpress TROP2, tend to have a better clinical outcome. They also exhibit better survival rates. Thus, TROP2 overexpression is an important independent marker of prognosis in lung carcinomas.

A similar relationship is seen in colorectal carcinomas [4]. Decreased overall survival and increased invasiveness is seen in stage IIB colorectal carcinomas that show upregulation of TROP2. Interestingly, there is differential expression of TROP2 and tumor aggressiveness in between right- and left-sided colorectal carcinomas [5]. For instance, left-sided colorectal carcinomas show significantly higher TROP2 expression in contrast to TROP2 expression in right-sided colon carcinomas. Recent data suggest that TROP2 is an independent parameter influencing prognosis in left-sided colon carcinomas. Tumors with accentuated TROP2 expression

also demonstrate more lymph node metastases as well as deeper depth of invasion. In patients with left-sided squamous cell carcinoma and low TROP2 expression, the median survival time is 63.1 months in contrast to 45.9 months in those with high TROP2 expression [5–7]. TROP2 expression is also an important parameter that influences the risk of developing hepatic metastasis.

About 56 % of gastric malignancies, especially the intestinal type, exhibit TROP2 overexpression [8]. Assessment of TROP2 in intestinal type gastric malignancies is highly significant. In these tumors, TROP2 is an independent parameter that influences cancer recurrence. In lymph node-positive patients, a negative relationship exists between TROP2 overexpression and disease-free survival as well as overall survival. It promotes cancerogenesis by activating the ERK MAPK pathway [9]. Fifty-five percent of pancreatic malignancies exhibit TROP2 overexpression [10]. In pancreatic malignancies that demonstrate accentuated levels of TROP2, a poor clinical outcome is seen typically. A positive relationship exists between lymph node metastasis and TROP2 overexpression. Similarly, a positive relationship exists between tumor grade and TROP2 overexpression. In the end, TROP2 overexpression is associated with decreased progression-free survival as well as decreased overall survival. The above examples clearly illustrate the role of TROP2 in systemic carcinogenesis and the need for further studies in this regard.

Conflicts of interest None.

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