Available online at www.sciencerepository.org

Science Repository

Research Article

Platelet-Lymphocyte Ratio, Circulating Tumor Cells and Circulating Tumor Microemboli as Predictors of Thrombosis in Patients with Gastric Cancer

Bruno Soriano Pignataro[1*], Emne Ali Abdallah[2], Vinicius Fernando Calsavara[2], Celso Abdon Lopes Mello[3], Kenji Nishinari[1], Guilherme Yazbek[1] and Ludmilla Thomé Domingos Chinen[2]

[1]*Departament of Vascular and Endovascular Surgery, A.C. Camargo Cancer Center, São Paulo, Brazil*
[2]*International Research Center, A.C. Camargo Cancer Center, São Paulo, Brazil*
[3]*Department of Medical Oncology, A.C. Camargo Cancer Center, São Paulo, Brazil*

ARTICLE INFO

Article history:
Received: 1 September, 2021
Accepted: 14 September, 2021
Published: 29 September, 2021

Keywords:
Circulating tumor cells
circulating tumor microemboli
thrombosis
gastric cancer

ABSTRACT

Background: Cancer-associated thrombosis (CAT) is a major cause of morbidity and mortality in oncology patients. There are no accurate risk assessment tools to predict venous thromboembolism (VTE). Circulating tumor cells (CTCs), circulating tumor microemboli (CTM), and high platelet-lymphocyte ratio (PLR) may predispose to VTE.

Objective: To evaluate correlations of CTCs, CTM, and PLR with VTE and progression-free survival (PFS) in gastric cancer patients.

Methods: Patients with gastric cancer were recruited (March 2016 to April 2017). CTCs were assayed by ISET at two timepoints: before neoadjuvant treatment (CTC1) and after surgery/before adjuvant therapy (CTC2) for patients with localized disease, and before first-line chemotherapy (CTC1) and after 6 months (CTC2) for patients with metastases. VTE incidence was determined retrospectively. PFS was estimated by Kaplan-Meier analysis.

Results: We studied 93 patients. According to Khorana scores, 63 (67.7%) patients were at intermediate and 30 (32.3%) were at high risk for VTE. VTE incidence was 20.4% and CTM were found in 39.8%. VTE developed in 7/37 (18.9%) CTM-positive and in 11/50 (22%) CTM-negative patients (p=0.93). When PLR >288, VTE occurred in 7/14 patients (p=0.005). PLR also associated with poor PFS (p<0.0001). CTC2 was associated with poor PFS (p<0.0001). CTC2, PLR and VTE were independent prognostic factors for PFS (p=0.005, 0.043, and <0.0001 respectively).

Conclusion: PLR is a prognostic indicator for PFS and for VTE in gastric cancer. Neither CTC, nor CTM improved risk stratification for VTE in our population.

Get access to the full version of this article: http://dx.doi.org/10.31487/j.COR.2021.10.01

[*]*Correspondence to: Bruno Soriano Pignataro, Departament of Vascular and Endovascular Surgery, A.C. Camargo Cancer Center, São Paulo, Brazil; E-mail: brunosoriano86@gmail.com*

http://dx.doi.org/10.31487/j.COR.2021.10.01