

The increment of platelet count is a risk factor of pulmonary thromboembolism in patients with pancreatic cancer treated with gemcitabine

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Introduction: Pancreatic cancer is among the most common cancers associated with pulmonary thromboembolism (PTE). Moreover, PTE has developed in patients with thrombocytopenia as well as thrombocytosis during gemcitabine-based chemotherapy.

Aim: The present study was aimed to determine the change of platelet count and the associated risk of PTE.

Methods: A retrospective 1:2 matched cohort study was performed to evaluate the risk of PTE in patient with gemcitabine-based chemotherapy for pancreatic cancer. Clinical parameter including rate of increment of platelet count (Inc-Plt) was checked in PTE group and non-PTE group. Inc-Plt was defined as the difference of platelet count from new cycle day 1 to last cycle day 15. The rate of Inc-Plt was defined as the rate of increased platelet count at new cycle day 1 compared with previous cycle day 15. Each patient in PTE group was matched with two patients in the non-PTE group.

$$\text{Inc-Plt} = \text{Platelet count at new cycle D1} - \text{Platelet count at last cycle D15}$$

$$\text{Rate of Inc - Plt} = \frac{\text{Platelet count at new cycle D1} - \text{Platelet count at last cycle D15}}{\text{Platelet count at last cycle D15}}$$

Results: From January 2010 to March 2015, 12 patients (9.1%) were diagnosed PTE during chemotherapy (PTE group) among 132 patients who received gemcitabine-based chemotherapy and 24 patients who did not have PTE were matched in non-PTE group. Age, sex proportion, body mass index, presence of metastasis, gemcitabine amount, previous anti-platelet agent medication, Karnofsky performance scale were not different significantly between two groups. The average Inc-Plt was $123.649 \pm 109.864/\mu\text{l}$ in PTE group and $141.978 \pm 129.846/\mu\text{l}$ in non-PTE group ($p=0.42$). The average rate of Inc-Plt was significantly higher in PTE group (32.1% in PTE group vs. 20.4% in non-PTE group, $p=0.033$). The average rate of Inc-Plt more than 30% was observed more frequently in PTE group (4.3 ± 1.6 in PTE group vs. 2.1 ± 1.8 in non-PTE group, $p=0.039$).

Conclusion: The incidence of PTE was 9.1% during gemcitabine-based chemotherapy in pancreas cancer. The increment of platelet count and high level of platelet during chemotherapy are the risk of PTE.

Biography

Ho Gak Kim has completed his MD from Kyungpook National University School of Medicine, Taegu, South Korea. He is the Chief Physician at Catholic University of Daegu School of Medicine, Daegu, South Korea since 2013. He has published more than 100 papers in reputed journals and has been serving as a President of Korean Pancreaticobiliary Association since 2014, and Editorial Board Member of *Clinical Endoscopy*.

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