PLATELET INDICES AND ALTERATION BY ADJUVANT TREATMENT IN PATIENTS WITH GASTRIC CANCER
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Background: Patients who have malignancy have an increased risk of thromboembolism. Also thromboembolism can be the first manifestation of cancer and is associated with a high rate of morbidity and mortality. Thromboembolic events occur in 4-20% of cancer patients and 50% of cancer patients had thrombosis in autopsy series. Platelets in circulation differ greatly in size and hemostatic potential. Mean platelet volume (MPV) is a machine-calculated measurement of platelet size from the blood that is usually reported in the blood tests as part of the CBC. Larger platelets have a greater risk for thrombosis and are more active than smaller platelets that are more frequently observed in stable conditions. In this study we investigated the relationship between the cancer chemotherapy (CT) and platelet indices changes in patients with gastric cancer.

Methods: This is a retrospective study designed in the Bulent Ecevit University School of Medicine. Outpatient oncology clinic records of 47 patients were searched between the period of 2005 and 2012 and patients with diagnosis of gastric cancer enrolled into the study. All patients were treated with FUFA regimen and or radiation therapy (RT).

Results: The median age of the study population was 59 (IR, 37-81). 35 patients were male and remaining 12 were female. The median overall survival was 30 months (5-60). The basal values of the platelet counts were 257000 (sd 123000), mean platelet volume (MPV) was 8,1 (sd 1), Platelet Distribution Width (PDW) was 16,6 (IR 2- 20) and platecrit was 0.20 (IR 0.04-0.48). The platelet count decreased 257000 to 221000 in the middle of the chemotherapy cycles and decreased to 201000 at the end of the CT cycles (p = 0.0001). MPV values decreased from 8.1 to 7.7 and 7.4 respectively (p = 0.0001). PDW values did no change significantly on the middle of CT (increased from 16.6 to 16.8 p = 0.3) but there was a significant increase at the end of the treatment (16.6 vs 17.2, respectively, p = 0.007). Also there were significant decrease in platecrit values (0.20 vs 0.17 and 0.149 respectively, p = 0.001). In this study 22 patients received radiotherapy. Platelet number decreased with radiotherapy from 255000 to 162000 (p = 0.0001). Also platecrit value decreased significantly (0.185 vs 0.129, p = 0.0003), PDW values were significantly increased after the RT (16.6 vs 17.1, p = 0.03) but MPV values did not change significantly followed by RT.

Conclusion: Evaluation of platelet activation in cancer patients still under investigation. We know that chemotherapy can decrease the platelet counts, neutrophils and lymphocytes in peripheral blood count. Also MPV values can increase or decrease by CT. Platelet count, platecrit, PDW and MPV values are related with thromboembolism in patients with cancer. In this study we found that FUFA regimen altered the platelet indices such as MPV, Platecrit, PDW and Platelet counts so it may explain the thrombosis in gastric cancer. In addition, RT did not changed MPV values but significantly decreased platelet counts and platecrits and significantly increase the PDW.