Anticancer Res. 1999 Jul-Aug;19(4C):3521-6.

Effects on blood coagulation of adjuvant CNF (cyclophosphamide, novantrone, 5-fluorouracil) chemotherapy in stage II breast cancer patients.

Pectasides D, Tsavdaridis D, Aggouridaki C, Tsavdaridou V, Visvikis A, Tsatalas K, Fountzilas G.

Source

Metaxas Memorial Cancer Hospital, Piraeus, Grecce.

Abstract

We prospectively studied the alterations of coagulation during adjuvant CNF (Cyclophosphamide, Novantrone--Mitoxantrone, 5-Fluorouracil) chemotherapy in patients with stage II breast cancer. In 50 consecutive stage II breast cancer patients (pre-peri-postmenopausal), and 50 controls, serial coagulation parameters including prothrombin time (P.T.), partial thromboplastin time (P.T.T.), fibrinogen, fibrinogen/fibrin degradation products (F.D.P.), protein C, protein S, antithrombin III (AT-III) and platelet count were performed. Blood samples for coagulation tests were collected at pretherapy, midtherapy (before the 3rd course), before the 6th course of chemotherapy, and 2 months after the cessation of therapy (post-therapy) of 6 cycles of adjuvant chemotherapy (Cyclophosphamide 500 mg/m2, Novantrone 10 mg/m2, 5-Fluorouracil 500 mg/m2). Chemotherapy was repeated every 3 weeks. None of our stage II breast cancer patients receiving adjuvant CNF chemotherapy developed thromboembolic complications. Before any treatment all the tested coagulation parameters were within the normal limits as compared to controls. No statistically significant changes of FDP were noted throughout the study. Fibrinogen, plasma protein C, protein S and AT-III were significantly decreased during chemotherapy. This decline was more evident at midtherapy. Their levels returned to the pretherapy values 2 months after the completion of chemotherapy. The P.T. was statistically shortened, while the P.T.T. showed a statistically significant prolongation during chemotherapy. In conclusion, it appears that monitoring stage II breast cancer with sophisticated coagulation tests during adjuvant CNF chemotherapy can not identify patients at high risk for thromboembolic events. These serially performed coagulation tests, could be considered as a cost-intensive monitoring and not justifiable as a screening for breast cancer patients receiving adjuvant chemotherapy. However, the increasing number of reports of life-threatening and sometimes fatal thromboembolic events following chemotherapy or hormonochemotherapy are of great concern. Our results suggest caution when using chemotherapeutic agents in patients with other thrombosis risk factors, since a significant decrease of protein C and protein S was observed in all patients. Additional studies are required to determine the exact association between chemotherapy and/or hormonochemotherapy and thrombotic events.