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Successful Treatment with Tranexamic Acid for Severe Bleeding in Acute Promyelocytic Leukemia

Acute promyelocytic leukemia (APL) is characterized by severe bleeding associated with disseminated intravascular coagulation (DIC) [1]. Therefore, it is of vital importance to prevent and treat DIC to reduce early death from bleeding complications in APL. Recently, it has been reported that tranexamic acid (TA) was successfully used to control bleeding in APL [2, 3]. We report here on the beneficial effects of TA treatment in an APL patient with severe bleeding complications.

A 30-year-old woman was admitted to our hospital with genital bleeding. She was 34 weeks pregnant. Complete blood count showed Hb 8.1 g/dl, WBC $37.1 \times 10^9/l$ with 32% atypical promyelocyte with Auer rods and platelets $57 \times 10^9/l$. A bone marrow aspirate confirmed the diagnosis of APL; moreover, chromosomal analysis of marrow cells by G-banding demonstrated 15;17 translocation. Coagulation studies revealed prolonged prothrombin time (16.0 s), low fibrinogen (118 mg/dl) and α_2 -antiplasmin (40.1%), and an increase in fibrin degradation products (FDP, 118 $\mu\text{g/ml}$). After the diagnosis of APL complicated with DIC, labor was induced artificially, and she delivered a normal boy. Thereafter, she received antileukemic chemotherapy, and heparin (10,000 units/day) was

intravenously administered for DIC with transfusions of platelets and fresh frozen plasma. Heparin was administered for 15 days. However, genital bleeding persisted. In an attempt to stop this severe bleeding, TA (3 g/day) was administered intravenously for 10 days. Responding to TA, genital bleeding stopped. FDP levels decreased from 138 to 4.7 $\mu\text{g/ml}$ and α_2 -antiplasmin levels increased from 45.3 to 88.4% after TA treatment. However, prothrombin time and fibrinogen were 15.7 s and 120 mg/dl, respectively. By these treatments a complete remission was achieved 1 month later. There were not thromboembolic complications during the TA treatment.

DIC is the most common complication of APL. Its severity and frequency are often aggravated by antileukemic chemotherapy, despite the use of heparin. TA is a potent fibrinolytic inhibitor, and has been considered rather contraindicated in the therapy of DIC. However, it may be concluded that TA is a drug of choice for selected cases of DIC with enhanced fibrinolysis often seen in diseases like APL.

References

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