

Excretion of Granulocyte Colony-Stimulating Factor into Human Breast Milk

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Excretion of human recombinant granulocyte colony-stimulating factor (G-CSF) into milk is reportedly low in rats, but is undetermined in humans [1–3]. We measured concentrations of G-CSF in human breast milk, obtained from a healthy breastfeeding mother, and found that G-CSF was excreted into human milk. A healthy 30-year-old woman was admitted on August 23, 2002, as the peripheral blood stem cell transplantation donor for her sister who had acute myelocytic leukemia. Four months previously, the donor had given birth to her second child and was breastfeeding. Laboratory data from hematology, blood chemistries, urine, electrocardiogram, and a chest X-ray were within normal limits. She stopped breastfeeding and was given lenograstim starting on August 23 (day 1). Lenograstim was administered at 300 µg/day by subcutaneous injection on day 1 and at 600 µg/day by subcutaneous injection from days 2 to 4. On day 4, white blood cell count increased to $56.0 \times 10^9/l$; the lenograstim dose was, therefore, reduced to 300 µg/day on days 5 and 6. The peripheral blood stem cells were harvested on days 5 and 6; $3.97 \times 10^6/kg$ CD34 cells were obtained. Throughout her hospital stay, she had no subjective symptoms except a low-grade fever and a mild headache. Regarding laboratory findings, platelets decreased to $88.0 \times 10^9/l$, and the lactic dehydrogenase and alkaline phosphatase levels increased slightly. After having obtained informed

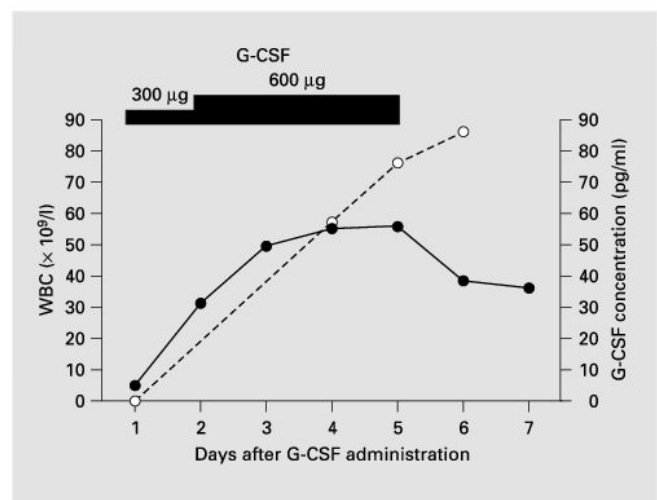


Fig. 1. Relationship between WBC and G-CSF concentration in breast milk after administration of recombinant G-CSF. ● = WBC; ○ = G-CSF concentration in breast milk.

consent, using ELISA we measured the G-CSF concentration in her breast milk before and after G-CSF administration. Before administration, G-CSF was under 5 pg/ml, but the peak value after administration was 85.7 pg/ml (fig. 1). After G-CSF has been injected intravenously or

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