Hyperleukocytosis: Emergency Management : Authors' Reply

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Received: 23 April 2013 / Accepted: 8 May 2013 / Published online: 6 June 2013
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To the Editor: We thank Gupta et al. for their comments. In a patient with acute leukemia, hyperleukocytosis and Hb >7 g/dL, hydration is initiated at 2–4 times of normal maintenance. Leukoreduction by either leukapheresis or exchange transfusion is considered if the patient has symptoms related to leukostasis. If an exchange transfusion is planned, recommended volume varies from 70 to 150 mL/kg, as mentioned in the article [1]. Exchange transfusion can be performed with whole blood or with a mix of packed red blood cells and plasma (in a ratio of 2–3:1). One may prefer a lower concentration of packed red cells (say 2:1, instead of 3:1) in a child with a higher Hb, compared to a very anemic child. The decision may be individualized.

It has been rightly pointed that hydroxyurea (HDU) has been used as a cytoreductive agent, typically in chronic myeloid leukemia (CML) and acute myeloid leukemia (AML). Its use appears to be less popular in pediatric as compared to the adult hematology services. HDU would not need to be considered in a patient with acute lymphoblastic leukemia, as rapid cytoreduction can successfully be achieved with steroid monotherapy in the large majority. It has been reported that HDU 50–100 mg/kg per day, given orally in 3–4 divided doses, reduces the WBC count by 50 % to 80 % within 24–48 h without causing tumor lysis pneumopathy or worsening the disseminated intravascular coagulation [2]. According to Porcu et al. it should be started immediately in all patients with hyperleukocytic AML and continued until more definitive chemotherapy is initiated [3]. HDU has a definitive role in CML.

Leukemoid reaction severe enough to cause hyperleukocytosis is very rarely encountered and reported in literature. Exchange transfusion has been recommended in the setting of pertussis pneumonia with hyperleukocytosis and pulmonary hypertension [4]. In a case report of a premature infant with intrauterine herpes simplex encephalitis and hyperleukocytosis (WBC: 116,700/mm³), a double volume exchange transfusion was performed on concerns of high blood viscosity contributing to the risk of neurological injury [5].

References

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