BLOOD 1995 (July), 86(1), 409-410

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Table 1. Patient Characteristics

Patient No.	Age (yr)	Prior Stroke	Pretransplant Neurologic Status: Clinical/Imaging
1	2	No	Normal exam with no history of dysfunction/normal cranial CT
2	10	No	Normal exam with no history of dysfunction/normal cranial CT
3	10	No	Normal exam with no history of dysfunction/normal cranial CT
4	4	No	Normal exam with no history of dysfunction/normal cranial CT
5	2½	No	Normal exam with no history of dysfunction/normal cranial CT
6	7	Yes	History of recurrent hemiparesis/normal cranial CT
7	13	Yes	History of seizure and coma/normal cranial CT
8	14	No	Normal exam with no history of dysfunction/normal cranial CT
9	6	No	Normal exam with no history of dysfunction/normal cranial CT
10	11	Yes	History of episodes of confusion/multiple small subcortical infarctions on CT
11	6	Yes	History of left hemiparesis/multiple small subcortical infarctions; large right frontal and parietal cortical, subcortical and deep white matter infarction
12	8	Yes	History of central facial paralysis/multiple small subcortical infarctions, cortical infarction in the left frontal and temporoparietal areas

Imaging: All CT or CT and MRI.
Abbreviation: CT, computed tomography; MRI, magnetic resonance imaging.

Table 2. Neurologic Events After Transplantation

Patient No.	Event	Day Posttransplant	BP (mm Hg)	HgB (g/dL)	PLT ($\times 10^9$/L)	Neuroimaging Study	Outcome
1	Seizures	12	130/80	9	48	Normal cranial CT	No sequella
10	Seizures	38	160/100	7.6	86	MRI: no change from baseline	No sequella
11	Seizures	10	140/100	10.4	19	MRI: no change from baseline	Return to baseline
12	Seizures	81	140/80	9.8	127	MRI: no change from baseline	Development of mild spastic hemiparesis

Abbreviations: BP, blood pressure; HgB, hemoglobin; PLT, platelet.

spastic hemiparesis, without magnetic resonance imaging (MRI) changes in neuroimaging studies.

Our single-center experience confirms the high frequency of neurologic complications after marrow transplantation for SCA, mainly in patients with previous stroke and/or pretransplant abnormal neuroimaging studies.

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Wider Benefits of Leukodepletion of Blood Products

To the Editor:

Leukodepletion of cellular blood products is often used in the treatment of hematologic malignancies with intensive chemotherapy and bone marrow transplantation (BMT). Recent trials have focused on prevention of HLA alloimmunization and refractoriness to allogeneic platelet transfusions. However, the mortality rate caused by bleeding is now very low and morbidity is rarely quantified.[1] There are other potential benefits from leukodepletion apart from a reduction in bleeding, and these include the possibility of changes in remission rate and duration of remission.[2-4] The Alloimmunization Study Group reported a multi-center prospective randomized trial of bedside filtration on HLA alloimmunization and its clinical sequelae,[5] and have now examined the effect of bedside filtration of blood products on relapse-free survival in the subgroup of patients with acute myeloid leukemia (AML).

Fifty-seven newly diagnosed adult patients with de novo AML were randomized at each participating center to receive either standard blood products or leukodepleted products by bed cell side filtration from the outset of therapy. All patients received standard non-

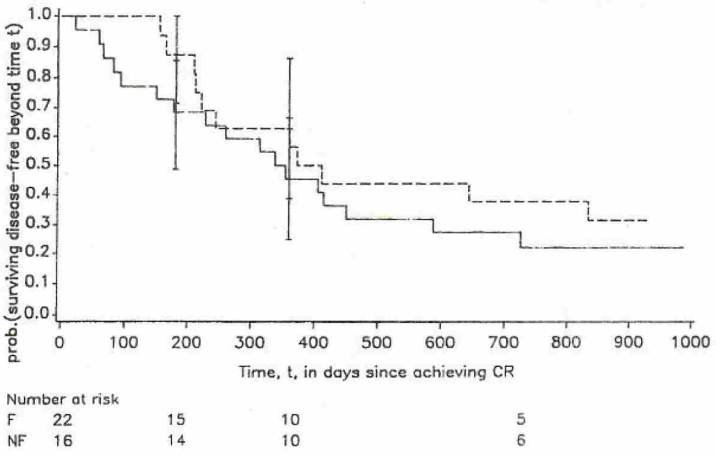

Fig 1. Kaplan-Meier plots of relapse-free survival for patients in CR from AML, separated by whether blood products were filtered (—) or not (---). *P* value for log-rank test = .394.

buffy coat–depleted blood products that were filtered or not at the bedside using Pall RC50 and RC100 red cell filters and platelet PL50 and PL100 platelet filters according to the manufacturer's instructions (Pall Biomedical, Portsmouth, UK).

All patients were treated with intensive chemotherapy regimes which included an anthracycline and cytosine arabinoside. Six patients subsequently received BMT in first remission (three allogeneic and three autologous). Relapse was recorded as the date of clinical relapse, because there are problems in defining and standardizing the time for relapse in AML.[6] The two groups were compared by log-rank test. Data on two patients from one participating center were not available. Twenty-eight patients were randomized to the filter arm and 27 to the nonfilter arm. The complete remission (CR) rate was 79% and 63% in the filtered and nonfiltered arms, respectively, with a 95% confidence interval for the difference −8% to 39% ($P > .05$). Of the 39 complete remitters, 1 patient was lost to follow-up and has been excluded from further analysis. Of the remaining patients, 22 relapsed and 5 patients died without relapse. No significant difference in disease-free survival was found between the two arms (Fig 1), with similar results for remission duration and survival. The results were similar when data from the six BMT patients were excluded.

This trial differed from previous reports in that it was a prospective randomized trial. Bedside blood product filtration, as currently practiced in the UK, sets no limits on product, type, or age, and cannot be readily quality controlled. It is recognized that leukocyte-derived debris passes through leukodepletion filters[7] and the question remains as to whether this might explain the lack of effect observed in our trial. In clinical practice, despite the use of standard operating procedures, it is difficult to monitor filter performance at the bedside. Validation is easier to perform when filtration is performed in the transfusion laboratory, and an effective quality assurance program should continuously validate the process.

Considering the question of whether the benefits of leukodepletion are cost effective, several issues need to be considered. Transfusion practices have already changed since these trials have been reported and many patients now receive buffy-coat–depleted blood products as the "standard treatment." The site of leukodepletion may affect the cost. In view of the problems of quality controlling bedside depletion, future studies should concentrate on the effect of prestorage filtration at blood bank centers. Improved CR rates or duration of remission may result in considerable savings. Finally, we agree that properly designed prospective clinical trials are needed to address these questions because the resources required to routinely leukodeplete all allogeneic cellular blood products in this clinical setting are not inconsiderable.

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