HLA-Matched Platelet Transfusion Therapy of Severe Aplastic Anemia

To the Editor:

We thank Dr. Duquesnoy et al. for the several interesting points they raised regarding our paper “HLA-Matched Platelet Transfusion Therapy of Severe Aplastic Anemia” published in the October 1978 issue of Blood.

1. We certainly agree with Dr. Duquesnoy et al. that platelet counts obtained on platelet concentrates vary significantly not only from donor to donor but also from time to time in the same donor. In addition, an accurate assessment of the number of platelets transfused cannot reliably be based on platelet counts obtained on an aliquot of a platelet concentrate because counts are remarkably inconsistent. We have evaluated a large number of counts on platelet concentrates prior to the institution of this study, and we believe that inevitable differences in platelet content of concentrates equal themselves out when large numbers of transfusions are examined. We have evaluated 1280 platelet transfusions, and we believe that this variable cannot have affected our data.

2. Dr. Duquesnoy et al. also suggested that a large number of our concentrates were obtained from other centers and therefore were transfused after more than 48 hr. Our platelet donors are selected through the National Platelet Donor Registry, and sometimes platelet concentrates are shipped from other centers (also from Milwaukee). In this study only one of our patients received platelets shipped from another center, for a total number of 9 platelet concentrates obtained from 3 different donors out of 1280 such concentrates infused.

3. Dr. Duquesnoy et al. also raised questions concerning cross-reactivity among HLA-A and -B antigens in our study. As of 1979, there is still no consensus among HLA typing centers concerning the cross-reactivities that exist among HLA antigens. Part of this confusion arises from the inability to distinguish between a real cross-reactivity of antigens, which is the expression of a similar antigenic structure, and a false cross-reactivity related to impurity of the antisera used. This problem will be solved when monospecific antisera are available, presumably through the hybridoma technique. For this reason a definitive evaluation of the usefulness of selecting platelet donors within cross-reacting HLA groups cannot as yet be made. As pointed out by Dr. Duquesnoy et al., we listed HLA 25 and 26 in separate cross-reacting groups. Changing the cross-reactivity listing to place HLA 25 and 26 in a single group would not affect our data, because none of our patients had either one of the two antigens. We considered B8 and B16 as cross-reactive, but only one B16-positive donor gave to one of our B8-positive patients, and on that occasion the posttransfusion increment was excellent.

4. Dr. Duquesnoy et al. are correct in saying, as we ourselves pointed out in our paper, that only 2 of our patients are A2-negative, the remaining 9 being A2-positive. In these two groups of patients, mean posttransfusion increments were not significantly different when mismatched platelets were transfused. These data are in contrast with findings of Dr. Duquesnoy et al. We made no general statement about possible influences of HLA-2 status and transfusion responsiveness, but we reported our data on this topic for completeness.

In contrast to previous studies on HLA-matched platelet transfusions, our own study and its conclusions were based on a homogeneous population of stable, severely alloimmunized aplastic anemia patients. The study encompassed the largest number of transfusions yet reported and as such permitted us to identify that HLA phenotyping was not invariably correlated with posttransfusion increments. As Dr. Duquesnoy et al. pointed out, the message that we feel emerges from our data is that HLA typing for A and B loci, performed as possible today, is helpful, but other still unknown factors seem to play a very important role. Only elucidation of these patterns together with a more precise definition of HLA specificities will increase our understanding of the role of HLA typing in platelet transfusions.

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Hla-matched platelet transfusion therapy of severe aplastic anemia [letter]

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