Blood Products Advisory Committee Meeting
June 14-15, 2001
Gaithersburg, MD

Summary for Topic V: Studies on Leukoreduction Filtration Failures

Issue:

In a draft guidance document published in January 2001 FDA proposed product standards for leukocyte reduced blood components. Donor screening for sickle cell trait was proposed as a strategy to prevent leukoreduction filtration failures related to this trait, however, alternative approaches are desirable.

Discussion:

Universal leukoreduction has been discussed several times with the FDA's Blood Products Advisory Committee (BPAC) and more recently with the PHS Advisory Committee on Blood Safety and Availability (ACBSA). In September 1998, BPAC advised FDA that the benefit-to-risk ratio associated with leukocyte reduction is sufficient to justify universal leukocyte reduction of blood components for transfusion. Such a requirement would require rulemaking by FDA. At its meeting in April 2001, the ACBSA recommended that FDA move forward with rulemaking to require leukoreduction for non-leukocyte blood components. Pending such a process, in January 2001, FDA issued draft guidance for comment on leukoreduction of Whole Blood and blood components entitled "Pre-Storage Leukocyte Reduction of Whole Blood and Blood Components Intended for Transfusion." This document proposed updated standards for leukocyte reduction. In its draft guidance the FDA recommended "Routine donor screening for sickle trait or use of a validated alternative method should be considered for all donors." This recommendation was based on reports in the literature and abstracts of scientific meetings that blood components from individuals with sickle trait may not filter properly. This approach is controversial, however. Although donors with sickle trait would remain eligible to donate other products e.g. by apheresis, industry has raised concern that a policy to screen donors for sickle trait could operate to discourage minority donations.

Last December, the PHS established a working group to explore possible technical solutions to filtration problems in particular filtration of blood from donors with sickle trait. The FDA contacted filter manufacturers, authors of published abstracts, and a number of blood collectors to determine whether there was a technical solution that would allow leukoreduction filtration of blood components from sickle trait donors. In the course of these inquiries, we have been informed by a number of blood collectors that they had experienced a loss of about 1% of donations upon implementing leukoreduction filtration. The most frequent cause was attributed to small clots. We are bringing the issue of leukoreduction filtration failures to the BPAC to gather information on the current state of implementation of leukoreduction, filtration failures and their causes, and experiments that might lead to practical

methods for filtering blood from sickle trait donors. The Committee will hear presentations by blood collecting organizations in the U.S. as well as experience gained abroad.

The FDA is asking the Committee to comment on the studies presented and to suggest scientific approaches to the problem of leukoreduction failures. In particular we seek the advice of the committee on methods to reduce filtration failures due to clots, and experiments to identify methods that could allow leukoreduction filtration in the face of hemoglobinopathies including sickle trait.

Questions for the Committee:

1. Do the Committee members endorse donor screening for sickle trait as a strategy to prevent leukoreduction filter failures?

2. Please comment on experiments that might be performed to determine conditions that would allow leukoreduction filtration of blood from donors with hemoglobinopathies including sickle trait.

3. Please comment on any additional strategies that could be pursued to reduce the incidence of leukoreduction filter failures from clots or other causes.

4. Should the labels on leukocyte filters be revised to address performance limitations including a) expected filtration time; and b) risk of failure in donors with sickle trait ?