Technical method

All 27 units of blood which required less than 40 min for filtration (mean 15-9 min) were less than four days old (mean 2-9 days). All bacterial cultures were negative. NHFTR was not reported in any of the recipients of the filtered blood.

Discussion and conclusion

The results showed that the Sepacell removed almost all the leucocytes and most of the platelets present in units of either whole blood or plasma reduced blood. The absolute number of leucocytes which remained in a unit of filtered blood (mean 0.04 × 10⁹) was far less than that (0.5 × 10⁹) usually required to produce NHFTR in a sensitised patient.*

The degree of platelet depletion was very high. The difference observed in the platelet depletion between filtered units of whole blood and plasma reduced blood was most likely due to the fact that the plasma reduced blood had had a platelet concentrate prepared from it shortly after collection, and therefore had a lower mean absolute number of platelets (49.9 × 10⁹) than whole blood (136.1 × 10⁹). The red blood cell loss was low, perhaps owing to the small size of the filter.

In our hands, the rate of blood filtration using the Sepacell was considerably faster than the rates of filtration observed using other commercially available filters. It is not clear why the rate of filtration in 13 filters excluded from the evaluation was slow even when a pressure infusor was applied. It has been suggested that the use of blood less than three days old, and thus presumably free from microring aggregates which could block the pores of the filter, might resolve the problem, but in the light of our experience this does not seem likely.

In conclusion, the Sepacell is a highly efficient and fast filter for leucocyte depletion of blood, whose only disadvantage, at present, is a slow rate of filtration in a third of the total number of filters evaluated.

We thank Mr F Fellingham in the Department of Haematology, University College Hospital, for the automated cell counts. We also thank Mr TG Proger of Kimal Scientific Products Ltd, for his helpful co-operation and for supplying the filters.

References


Requests for reprints to: Miss Jane Johnson, North London Blood Transfusion Centre, Deanbrook Road, Edgware, Middlesex, HA8 9BD, England.

Letters to the Editor

Deleterious effect of sodium azide on the activity of peroxidase

Richardson et al. reported that sodium azide has an inhibitory effect on the activity of peroxidase conjugates. We have made a similar observation with sera containing sodium azide (0.1%). These sera were tested by Corzyme (Abbott Laboratories, Chicago), which is a competitive enzyme immunoassay (EIA) for the detection of antibody to hepatitis B core antigen (anti-HBc). Anti-HBc in the test serum competes with a constant amount of horse-radish peroxidase conjugated anti-HBc for binding sites on beads coated with hepatitis B core antigen (HBcAg). The proportion of enzyme-conjugated anti-HBc bound to the bead is inversely proportional to the concentration of anti-HBc in the specimen. Thus, within limits, the greater the amount of anti-HBc in the specimen, the lower the absorbance.

Four sera containing 0.1% sodium azide, negative for anti-HBc by radioimmunoassay (RIA) were tested by EIA and found to be false-positives. The absorbance value for these sera was very low, thus indicating that the activity of the peroxidase was inhibited. Four anti-HBc positive samples containing 0.1% sodium azide were also tested by EIA. The effect on the positive sera could not be evaluated due to the nature of the test (Table). Four sera negative for anti-HBc by both RIA and EIA were retested by enzyme assay immediately after adding 0.1% sodium azide and two were found to be false-positive again and in a few other samples absorbance value was significantly reduced. False-positive results were not encountered when samples without sodium azide were tested by EIA. The results obtained for these samples by RIA and EIA were similar. This shows that sodium azide has an inhibitory effect on peroxidase when they are in direct contact.

Our experience with sandwich type of assays, such as Auszyme II, Ausab EIA and HBe EIA (Abbott Laboratories, Chicago) showed that sodium azide has no deleterious effect in these tests as azide does not come in direct contact with the peroxidase.
Effect of sodium azide on EIA (Corzyme)

<table>
<thead>
<tr>
<th>Sera tested with</th>
<th>Corab (RIA)</th>
<th>Corzyme (EIA)</th>
</tr>
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<tbody>
<tr>
<td>sodium azide</td>
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Quality assurance and medical audit in histopathology

In the Bulletin of the Royal College of Pathologists, there is a report under this heading that “Council has given consideration to the means for encouraging quality assurance and medical audit in histopathology. It recommends that histopathologists should form 'slide-clubs' at which material of interest and importance can be studied. Experts should be invited to discuss specific topics and exchanges of material between different slide-clubs encouraged. The geographical distribution of these clubs should be such that all histopathologists should be able to participate on a regular basis.”

Is this really the summary of what Council has achieved in its discussion of this important issue? The suggestion that histopathologists should form slide-clubs certainly lacks originality, but in any case the way in which these are advised to function can in no way be regarded as a form of quality assurance or medical audit. What constitutes medical audit in histopathology is perhaps debatable but there is a wide range of options available for both macroscopic and microscopic work (see Bibliography).

References

Bibliography

Confusion of terms “birefringence” and “optical activity”

There is a tendency for authors of histopathological studies to use the term “birefringence” when “optical activity” is intended. The first term means double refraction or having two refractive indices, which is shown by passing a beam of light through a crystalline solid and observing that the beam is split into two rays. Optical activity is a different property which applies to some solids and liquids and indicates that a beam of polarised light is rotated when passing through them. This is the phenomenon studied in tissue sections when examining for foreign bodies, crystals, amyloid etc.

The apparent confusion between these two properties of matter possibly arises because each of the two rays issuing from a birefringent crystal—for example, a Nicol prism—consist of polarised light and may be used as a source of such light.

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Platelet storage in PL 146, CLX and Biotest 733822 Plastics

The Oxford Transfusion Centre recently confirmed the superiority of the PL 732 (Travenol Laboratories Ltd) polylefin packs over the conventional PL 146 packs for platelet storage over five days. Since the PL 732 packs are now no longer available in the UK we have now tested two other packs designed for extended platelet storage; CLX from Cutter Ltd and 733822 a new pack from Biotest-Folex Ltd.

Whole blood (450 ml) was collected from 31 healthy donors who had taken no drugs during the previous seven days. All donations were taken into CPD anticoagulant, 7 into Travenol PL 146 packs serving as controls, 12 into Biotest-Folex 733822 packs and 12 into Cutter CLX packs. Each platelet concentrate

Letters to the Editor

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R K Chaudhary and C Parker

doi: 10.1136/jcp.36.10.1201

Updated information and services can be found at:
http://jcp.bmj.com/content/36/10/1201.citation

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