BOOLEAN ALGEBRA, MAJOR DEFECTS, MINOR DEFECTS, AND HEMOSTASIS. Thomas K. Hathhorn. Veterans Administration Center, Temple, Texas, U.S.A.

The purpose of this paper is to show how simple application of Boolean algebra to hemostasis can be used in the diagnosis and teaching of problems in coagulation. By utilizing a simple Venn diagram with plasma factors, hemostatic plug and vascular factors (includes categories and dividing defects in these areas arbitrarily into major and minor defects, a simple holistic approach is revealed. Any major defect (e.g. < 5% AHG or a large lesion) may result in persistent hemorrhage. One minor defect in any area of the diagram does not alter hemostasis clinically or cause spontaneous or persistent hemorrhage. Two minor defects or more in any area may be associated with spontaneous hemorrhage (e.g. 20% AHG and aspirin ingestion). If one sees a bleeding patient and one minor defect is noted, look for a second minor defect. Utilizing this approach to common everyday problems in coagulation with trauma or pathologic lesions constituting one defect reveals the submerged part of the iceberg of treatable hemorrhagic disease. Listing of major and minor defects with illustrative case histories will be presented.

THE PREPARATION OF PLATELET-RICH PLASMA. Noel Clarke and Vincent McCabe. Depts. of Pathology, Mechanical Engineering, University College, Dublin, Ireland.

Different gravity forces and times have a marked effect on the yield of platelets and plasma obtained from the centrifugation of whole blood (Woods et al. *Thrombosis & Haemostasis*, 36, 302-310, 1976).

The sedimentation of red cells and harvesting of platelets and plasma by centrifugation with step change in the gravity field was modelled in a computer programme, and the effect of the reflux of plasma and platelets was taken into account (methods in reference). The optimum method (at present) was based on a high centrifugal field ($G_{av} = 1740g$; $G_{max} = 1992g$; 3000 rpm; $r_{av} = 173$ mm; $r_{max} = 198$ mm) for a short period (75 seconds) followed by a low centrifugation field ($G_{av} = 48g$; $G_{max} = 55g$; 500 rpm) for about 3 minutes. During the first stage platelets refluxed to the plasma zone, and during the second stage the red cell zone moves outwards faster than the platelets. The recovery of platelets was $12.6 \pm 3.6\%$ higher than that obtained with the optimum single stage centrifugation method using ethylenediamine tetra-acetic acid (EDTA). It is not yet known how representative the recovered platelet populations are in regard to size. The platelet recovery is lower with citrate than EDTA using both methods. These findings were confirmed by optically monitoring the plasma zone in a circular transparent rotor.

The centrifugal platelet and plasma yield is also influenced for each individual blood by unknown intrinsic sedimentation properties, e.g. erythrocyte sedimentation rate. The fitting of more precise information to the computer programme is required before the ideal method can be achieved.

FIBRINOGEN-FIBRIN MONOMER COMPLEXES IN CIRRHOSIS OF THE LIVER. S.Coccheri, G.Palareti, M. Poggi and G.Oca. Department Angiology and Blood Coagulation of the Regional Hospitals, Bologna, Italy.

Positivity of paracoagulation tests in a previously studied group of 80 patients with chronic active liver disease did not exceed 5-10% of the cases. In the present study, plasma samples from 20 cases of decompensated liver cirrhosis, assessed by liver biopsy, were investigated by means of agarose chromatography. Fibrinogen related materials were measured immunologically and by Staphylococcal Clumping Test.

First appearance of fibrinogen-like materials occurred at earlier fractions in cirrhotic patients in comparison with normal controls. The relative amount of soluble fibrin monomer complexes (SFMC) as referred to total fibrinogen was significantly increased. No correlation was found between the amount of SFMC and the severity of fibrinogen polymerisation defect.

Circulating SFMC are therefore present in severe liver cirrhosis. However, DIC may not be the only proposed explanation for this finding.