additional patients with one or both of these features were then selected for an anti-
platelet therapy trial; having received warfarin for 1 to 2 years, they were switched to a
16-week course of entrophen 300 mg and sulfapirazole 200 mg, 4 times daily. Treatment
was monitored by platelet adhesiveness, template bleeding time and serum salicylate
measurements. There were no hemorrhagic complications. In 3 patients, intolerance
compelled dosage reduction or stopping one drug; 10 adhered to protocol. 4 of the 13
suffered a thromboembolism while taking both drugs according to protocol. This 31%
iccidence is almost identical to that seen when no treatment followed warfarin with-
drawal. The study is continuing, but the results to-date suggest that entrophen-sulfap-
pirazole is not a practical or effective treatment for coronary disease. They do not
preclude possible effectiveness of this combination in other vascular disease or other
antiplatelet drugs in coronary disease.

A. L. Bloom, J. C. Giddings and S. A. M. Shearn (University Hospital of Wales, Cardiff,
U.K.): Immunohistological Studies of Coagulation Factors in Normal Blood Vessels and
Platelets.

(301)

Rabbit antisera to factors II, V, VIII (related protein), X, XI, fibrinogen and fragment
D have been used to localise these factors in normal blood vessels and platelets by an
indirect fluorescent antiglobulin technique. Localization of factors V and VIII (RP)
confined to the endotihelium of normal blood vessels was confirmed but the presence of
fibrinogen and fragment D at this site was variable and these latter antigens were also
demonstrated in the sub-intima and media. There was no evidence for the presence of
prothrombin and factor X in normal blood vessels. Platelets, separated by albumin-
gradient centrifugation were washed up to 12 times in buffer with and without Ca++. 
Factor VIII (RP) and factor V were present in platelets and resisted removal by repeated
washings. Initial studies indicated that factor XI is not present in platelets or is easily
removed. Weakly positive reactions were obtained for prothrombin with four-times
washed platelets but the reaction was enhanced by repeated washings. Factor X (or Xa)
was removed from platelets by Ca-free buffer but not by Ca – containing buffer. The results
indicate the selective presence of coagulation factors in vascular endothelial cells and
platelets and are consistent with the finding of a Ca-dependent link between phospholipid
and factor Xa which was also demonstrated in conventional chromatographic studies.

E. J. W. Bowie, V. Fuster, C. A. Owen, Jr. and A. L. Brown (Mayo Clinic, Rochester,
MN. 55901 U.S.A.): Resistance to the Development of Spontaneous Atherosclerosis in Pigs
with Von Willebrand's Disease.

(302)

The thoracic and abdominal aortas of 26 pigs with von Willebrand's disease were
examined for atherosclerosis by gross inspection. In 6 of these pigs, older than one year,
a detailed histological study was made from tissue taken from areas most likely to develop
atherosclerosis in the pig i.e. the distal part of the lesser curvature of the aortic arch and
the posterior descending thoracic aorta at the level of the fifth intercostal artery. Six
normal pigs were matched with the 6 von Willebrand pigs by breed, age, sex, and heart
weight and a similar gross and histologic study of their aortas was performed. The aortas
of 5 of the 6 normal pigs showed atherosclerotic lesions consistent with the known high
frequency of atherosclerosis in normal pigs about one year of age. Only one of the bleeder
pigs showed an atherosclerotic lesion; this was a fatty streak at the origin of the innominate
artery. These preliminary observations suggest that pigs with von Willebrand's disease
are more resistant than normal pigs to the development of atherosclerosis. This may be
related to the impaired platelet function in von Willebrand's disease. We are extending
these observations by means of prospective controlled dietary studies.