Z. M. Ruggeri, P. M. Mannucci, S. L. Jeffcoate and G. I. C. Ingram (Hemophilia and Thrombosis Centre, University of Milan, Dept. of Clinical Chemistry and Dept. of Hematology, St. Thomas Hospital Medical School, London): **Immunoradiometric Assay of Factor VIII Related Antigen. (341)**

The development of a solid phase non-competitive immunoradiometric assay (two-site assay) has allowed us to measure factor VIII related antigen ($VIII_{AGN}$) in normal plasma diluted up to 2500 times (4.10^{-4} U/mg). The assay is based on the extraction of $VIII_{AGN}$ from plasma by means of polystyrene tubes coated with a specific rabbit antiserum and subsequent labelling of the extracted protein with ^{125}I labelled rabbit anti-$VIII_{AGN}$IgG. The plasma values obtained in 32 normal subjects were highly correlated with those obtained by means of rocket immunoelectrophoresis ($r = 0.94$). A positive correlation was also shown with factor VIII procoagulant activity ($VIII_{AHF}$) ($r = 0.61$), and with von Willebrand factor ($VIII_{VWF}$) ($r = 0.64$). In 14 patients with severe von Willebrand's disease (vWd), $VIII_{AGN}$ was not detectable ($< 4.10^{-4}$ U/ml) in 8 cases or measurable in trace amounts (6.10^{-4}–10^{-2} U/ml) in 6 cases. Measurable levels could also be obtained (5.10^{-2}–10^{-1} U/ml) in 14 additional cases of vWd in which $VIII_{AGN}$ was below the sensitivity of the rocket immunoelectrophoresis technique (10^{-1} U/ml).

J. M. Lavergne, Dominique Meyer, C. S. P. Jenkins and Marie-José Larrieu (Institut de Pathologie Cellulaire, Hôpital de Bicetre, 94270 Le Kremlin Bicêtre, France): **Dissociation of "Factor VIII Complex" in Various Animal Species. (342)**

Under conditions of high salt concentration, "Factor VIII complex" (Factor VIII activity, Willebrand Factor activity – measured using a washed platelet system and ristocetin – and Willebrand antigen) may be dissociated into a high (M. W. $> 10^6$) and a low molecular weight fragment. The dissociation of "Factor VIII complex" was studied by a two step procedure. Human or animal plasma or cryoprecipitate was submitted to gel filtration on Sepharose 4B, using 0.15 M NaCl, Imidazole or Tris-HCl Buffer as eluant. The void volume fraction, containing the three entities of "Factor VIII complex" was concentrated and submitted to a second gel filtration using a dissociating buffer as eluant (1 M NaCl or 0.25 M $CaCl_2$). The three entities of "Factor VIII complex" were measured in the eluted fractions. "Factor VIII complex" was found to dissociate using the high salt buffer in some but not all animal species. When dissociation occurred, Willebrand Factor activity and antigen eluted in the void volume, and Factor VIII activity in later fractions. Heterologous antisera were raised against the different fractions and the reactivity towards human and animal plasma was studied.

David S. Rosengarten and J. Clarke McNeur (Monash Medical School, Alfred Hospital, Melbourne, Victoria, Australia): **Prophylaxis of Deep Vein Thrombosis after Total Hip Replacement. (343)**

In a prospective randomized study designed to compare the effectiveness of intraoperative electrical calf stimulation, perioperative low dosage heparin, and aspirin, either alone or in combination, as prophylactic measures for deep vein thrombosis following total hip replacement, the incidence of thrombosis, as diagnosed by the radioactive fibrinogen uptake test in the study groups was: Control – 9 out of 20 (45%); Calf Stimulation – 9 out of 22 (41%); Aspirin – 9 out of 20 (45%); Heparin – 7 out of 21 (33%); Aspirin plus Calf Stimulation – 10 out of 20 (50%); Heparin plus Calf Stimulation – 0 out of 25.

Following this study only 2 patients developed thrombosis during the period of heparin administration out of a further 104 consecutive patients given low dosage heparin and calf stimulation. Of these patients, thrombosis occurred within 48 hours of cessation of heparin in 11 out of 52 (23%) given heparin until the tenth postoperative day, and in 7 out of 75 (9%) given heparin until the 14th postoperative day.

Data will be presented to support the following conclusions: 1. *The incidence* of thrombosis is (i) high (about 50%), (ii) over 50% of thromboses occur either during or soon after operation, (iii) no more frequent in either the operated or non-operated legs. 2. *Clinical*