52 min. A subset of dogs (n = 4) had imaging for 90 min. Radiolabeled microspheres were injected at the time of IPPA injection and before sacrifice. RA flow [% normal zone (NI)] remained constant during the experiment (initial: 80 ± 3.3%; late: 77 ± 3.3%, p = 0.58). Reconstructed SPECT short axis images were quantified using circumferential count profiles and RA IPPA activity expressed as %NI. Initial RA IPPA activity (79 ± 2.1%) was similar to the initial flow deficit (p = 0.78). However, at 52 min after IPPA injection the RA IPPA deficit had normalized (97 ± 3.3%, n = 6) relative to initial RA IPPA activity (p = 0.01), and initial RA flow (p = 0.01). Myocardial IPPA clearance from RA and NI regions are shown for 4 dogs imaged for 90 min. Significant "normalization" of the defect occurred within 12 min post IPPA injection (p = 0.03).

Thus, measurement of myocardial IPPA clearance with dynamic SPECT imaging can potentially identify ischemic viable myocardium accurately and as early as 12 min post injection.

1041-91 Nuclear Testing in Patients With High Pre-Scan Likelihood of CAD or Previous MI: Is There Benefit From Added Prognostic Value?

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The enhanced stratification or benefit from added prognostic value of nuclear testing in patients with a high likelihood of CAD (high Lk) is not known. Thus, we identified 2190 consecutive patients (pts) with high prescan Lk or previous MI who underwent rest Tl/stress Tc-99m sestamibi dual isotope myocardial perfusion SPECT (DIMPS) and were followed for at least 1 year (yr) for events [cardiac death (CD), non-fatal myocardial infarction(MI)]. DIMPS was visually assessed using 20 segments scored on a 5 point scale (0 = normal, 4 = no uptake) and rest and stress scores were used to calculate the summed stress score (SSS), summed rest score (SRS), and summed difference score (SDS = (SSS-SRS)). Results: During a mean follow-up period of 1.8 ± 0.7 years, 158 events occurred (91 MI and 67 CD), and 246 pts were censored for early revascularization. Using a stepwise Cox proportional hazards model, we found that pre-scan Lk and history of CAD yielded significant information ($\chi^2 = 12$). SSS, the most predictive nuclear variable, added significant further information (χ^2 increased to 56, $p < 0.0001$). Pts with normal scans had 0.7% event rate in the first year (n = 425, 0.7% CD, 0% MI). Over this same time period, pts with mildly and severely abnormal scans were at similar risk for MI (n = 471, 1048, 3.2%. 3.3% respectively). The risk for CD was greater in pts with severely abnormal scans than mildly abnormal scans (2.5% vs. 0.8%, $p < 0.05$). 896 of 1944 pts were reclassified by normal or mildly abnormal scans as low risk for CD by DIMPS.

Conclusion: DIMPS added significant incremental prognostic value over clinical information alone in pts with high Lk of CAD or prior MI and reclassified 46% of pts as low risk for cardiac death.

1042 Progress in Thrombosis and Embolism

Wednesday, March 27, 1996, 3:00 p.m.–5:00 p.m.
Orange County Convention Center, Hall E
Presentation Hour: 4:00 p.m.–5:00 p.m.

1042-92 Pulmonary Vascular Endothelial Function Is Depressed in Experimental Pulmonary Embolism

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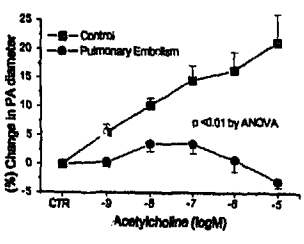
The role of endothelium-derived relaxing factor (EDRF) in modulating pulmonary vascular reactivity was examined in experimental pulmonary embolism (PE) by intrapulmonary infusions of acetylcholine (ACH) and nitroglycerin (NTG). PE was created in 14 mongrel dogs by injecting autologous thrombin-clots into the jugular vein. Selective cine angiograms of a segmental pulmonary artery (PA) were obtained after infusion of graded concentrations



of ACH (10^{-9} to 10^{-5} M) followed by NTG into the PA before and after PE. Percent change in the PA diameter was measured using digital calipers. Dose response curves obtained from mean values for control and after each infusion of ACH are displayed.

Results: Infusion of ACH before PE (control) produced a dose dependent vasodilatation. In contrast, ACH infusion after PE produced minimal change in PA diameter. (p = < 0.01 control vs. PE). However, infusion of NTG after PE produced pulmonary vasodilatation, indicating preserved endothelium-independent vasodilatation. *Conclusion:* ACH mediated EDRF release from the pulmonary vascular endothelium is impaired in experimental pulmonary embolism.

1042-93 Effect of Differing Thromboplastin Reagents and Lab Instrumentation on INR Determinations for Patients Receiving Therapeutic Intensity Anticoagulant Therapy

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Expanding indications for oral anticoagulant therapy have increased the need for reliable monitoring of anticoagulant effect. The prothrombin time has been the standard test of anticoagulant intensity and is routinely reported as an International Normalized Ratio (INR) to compensate for differences in thromboplastin reagent sensitivities. To determine the expected variation in INR determinations due to the different reagents and coagulation instruments utilized in clinical laboratories in North America, we prospectively collected serum samples from 50 unselected patients receiving warfarin therapy. For each patient sample, the INR was determined with each of 5 reagents (International Sensitivity Index (ISI) values ranging from 1.03 to 1.96) and on each of 3 instruments. The following table demonstrates the variation in individual patient INR values obtained with different reagent/instrument combinations at differing levels of anticoagulant intensity demonstrating the increased variation due to instrumentation:

Mean INR across reagents	Range of INR values across reagents	Range of INR values across instruments
2.5	2.1–3.1	1.9–3.3
3.5	3.0–4.8	2.5–4.8
4.5	3.8–5.2	3.2–5.4
6.0	4.1–8.3	3.6–9.6

Conclusion: Currently available commercial thromboplastin reagents and coagulation instruments allow for clinically significant variation in INR determinations across the spectrum of combinations available. This has significant implications both for the clinical management of patients and for the interpretation of research results.

1042-94 Thrombolytic Therapy Is a Promising Therapeutic Option for Patients With Renal Arterial Embolism

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Renal arterial embolism (RAE) is a rare, but severe manifestation of arterial embolic disease. With thrombolysis (T), if applied early, however, renal artery patency may be restored and major abdominal surgery and loss of renal function can be prevented. Currently, only 25 cases of RAE and T are reported in the literature. We report from 17 consecutive patients (pts) with angiographically proven RAE, who were treated with either rt-PA i.a. (n = 12) (2 mg bolus and 1.5 mg/h for 12 h) or urokinase i.a. (n = 5) (100.000 IU bolus and 100.000 IU/h for 12 h). Successful reperfusion was achieved in 15 pts (88%). Complete restoration of renal function however, as demonstrated by creatinine and szintigraphic studies, was observed in only 6 pts (35%), partial impairment of renal function in 8 pts (47%) and complete loss of renal function in 3 (18%). Gross haematuria occured in all 15 pts (100%) successfully reperfused. The incidence of major haemorrhage was 12% (2 pts). No fatal or cerebral haemorrhage was observed. It is of importance to mention, that after restoration of renal blood flow a period of 7 to 10 days with severe renal dysfunction was a constant finding in all patients before the kidneys finally recovered. Creatinine and BUN increased from pretreatment 141 ± 77 to a maximum value 612 ± 202 mmol/l on day 5 and 12.3 ± 6.8 to 40.8 ± 11.6 mmol/l respectively. They finally returned back to 187 ± 141 mmol/l (Creatinine) and 16.1 ± 9.3 mmol/l (BUN) on day 14.

Conclusion: If diagnosis of RAE is set up in time and T is initiated early, reperfusion is possible in > 80%, resulting in good recovery of renal function in the majority of pts. T in RAE therefore seems an effective therapeutic option with an acceptably low haemorrhagic risk.