2:45

800-4 Cardiac Risk Assessment Following Vascular Surgery — Independent Validation of a Bayesian Prediction Model

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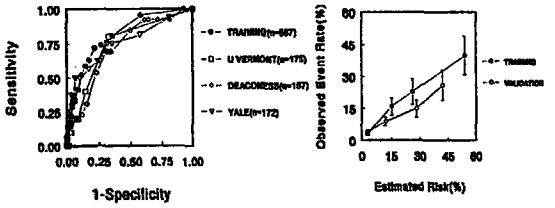
We previously described a Bayesian cardiac risk prediction model developed from a "training" set of 567 vascular surgery pts from 2 medical centers (43rd ACC). Here, we report the results of a validation based on 514 additional pts from 3 centers. The original model permitted sequential estimation of risk of fatal/non-fatal MI based on surgery type (TYPE), TYPE + clinical markers (CLIN): (HxMI, Angina, CHF, Diabetes, age > 70 y, prior CABG), and TYPE + CLIN + dipyridamole thallium data (fixed/reversible defects, ischemic ST changes). Model performance was assessed using receiver operator curves (ROC) and by comparing observed event rates to risk estimates.



Results are shown above for both the training and validation sets (1,081 patients). *Figure 1:* ROC areas were 81 ± 3% for the training set and 74 ± 9%, 72 ± 7%, and 76 ± 5% for each of the 3 validation sets (p = NS). *Figure 2:* Observed and estimated risks were comparable for the training set ("goodness of fit" p = 0.75), and all 3 validation sets (p = 0.55, 0.10, 0.45, respectively). *Conclusions:* The Bayesian prediction model can reliably estimate the risk of a perioperative cardiac event in both the training and validation sets and is thus generalizable to the vascular surgery population.

3:00

800-5 Evaluation of Ventilation/Perfusion Scintigraphy Using Tc-99m Diethylenetriamine Pentacetic Acid (DTPA) Aerosol in the Diagnosis of Pulmonary Embolism

Nelson P. Trujillo, Jonathan P. Pratt, Sachin Talusani, Robert A. Quaife, David Kumpe, James L. Lear. *University of Colorado Health Sciences Center, Denver, CO*

Ventilation/perfusion (V/Q) scintigraphy has generally been performed using Xenon-133 for ventilation. However, PIOPED and other studies that have employed this technique have raised questions about accuracy in the diagnosis of pulmonary embolism (PE).

We evaluated the accuracy of V/Q scintigraphy using Tc-99m DTPA aerosol, as opposed to Xenon-133, in the evaluation of suspected PE. The use of Tc-99m DTPA offers potential advantages: greater resolution and the ability to perform ventilation imaging in the same eight views as those of the perfusion study.

Diagnostic criteria developed specifically for Tc-99m DTPA aerosol were prospectively applied to 2922 patients being evaluated for suspected PE over a six year period. Of these patients, 16% had normal V/Q scans, 56% had low probability scans, 10% had indeterminate scans, 9% had medium probability scans, and 9% had high probability scans. The total percent of scans in normal, high, or low categories was 81%, compared to 61% in PIOPED. Pulmonary angiography was performed on 264 patients. Pulmonary embolic disease was identified in 0/1 (0%) of normal scans, 3/59 (5%) of low probability scans, 13/54 (24%) of indeterminate scans, 35/94 (43%) of medium probability scans, and 53/56 (95%) of high probability scans. Estimated incidence of PE in the total population was 15%.

These results indicate that V/Q scintigraphy using Tc-99m DTPA aerosol 1) is useful in the diagnosis of pulmonary embolic disease and 2) has accuracy which is superior to published results using Xenon-133, including PIOPED. We believe that Tc-99m DTPA aerosol should replace Xenon-133 in V/Q scintigraphy for the diagnosis of suspected pulmonary embolism.

3:15

800-6 Anticoagulation Monitoring: Accurate Results With Patient Self-Testing in a Multicenter Trial

Richard Becker, Daniel Becker, Maureen Andrew, Jack Ansell, Douglas Triplett, Catherine Cimini, Frank LaDuca, and the Oral Anticoagulation Study Investigators. *Thrombosis Research Center, University of Massachusetts Medical Center, Worcester, MA*

A novel whole blood Prothrombin Time (PT) system (ProTIME Microcoagulation System, International Technidyne Co., Edison, NJ), was tested in five anticoagulation clinics to assess the patient's ability to collect and test a finger-stick blood sample (FS) and to assess the accuracy of the ProTIME result (INR) with the lab plasma assay. FS and venous samples (VS) were obtained from control volunteers (n = 65) and patients receiving warfarin (n = 230). Written, video, and verbal instruction was provided by a Health Care Professional (HCP). Once collected, blood was automatically tested in triplicate with concurrent control tests. VS was sent to the hospital lab for testing (ISI ranging 1.2 to 2.1). A sample of the plasma was shipped to a reference lab where the assay was repeated (Recomboplastin, ISI = 1.0). The HCP noted patient attempts necessary to obtain a ProTIME result. The first attempt was successful for 83% of the patients. An additional 10% were successful in the second try. Most graded the monitor "Easy" to use (85%) while few identified it "Difficult" (7.5%). Participants preferred the FS sampling method (92%). No difference was detected between ProTIME results of VS and FS (Student's t Test). The ProTIME INR was significantly correlated to the reference lab (r = 0.94 for VS and r = 0.93 for FS). The correlation of FS to each hospital site ranged from r = 0.89 to r = 0.93. *Conclusion:* Patients prefer and can readily test themselves with the ProTIME Monitor yielding test results that are highly correlated to the laboratory.

801 Coronary Artery Care: Effects to Improve Efficiency

Wednesday, March 27, 1996, 2:00 p.m.–3:30 p.m.
Orange County Convention Center, Room 224C

2:00

801-1 The Effect of Public Release of Bypass Surgery Mortality Data on Procedural Access in the Elderly: New York State

Eric D. Peterson, James G. Jollis, Elizabeth R. DeLong, S. Robert Collins, Lawrence H. Muhlbaier, Daniel B. Mark. *Duke University Medical Center, Durham, NC*

New York (NY) State has released provider-level bypass surgery (CABG) mortality data since 1989. Some speculate that this policy may force higher-risk patients, particularly the elderly, to go out-of-state for CABG or to forgo intervention. Using Medicare data, we examined CABG use in and outside NY. We tested (1) whether the % of patients aged ≥ 65 years who received CABG outside NY increased from 1987 to 1992 and (2) whether CABG use declined in NY in higher-risk patients, defined as those aged ≥ 70 years with acute MI (AMI), versus US practice patterns during this period.

	1987	1988	1989	1990	1991	1992
NY Medicare CABG recipients, n	5488	5784	6148	7093	8279	9075
Out-of-State CABG, %	13.2	15.0	14.8	13.1	13.3	11.6
NY Pts aged ≥ 70 yr with AMI + CABG, %	4.4	5.8	6.3	8.8	7.7	8.1
US Pts age ≥ 70 yr with AMI + CABG, %	6.9	8.4	9.2	10.5	10.4	11.1

The % of NY's elderly migrating out-of-state for CABG has declined since the release of provider profiling data. In addition, an increasing % of NY's high-risk elderly patients with AMI received CABG over this period in parallel with national practice patterns.

Conclusion: Public release of provider-level CABG mortality data in NY does not appear to have limited access to CABG procedures for the elderly.

2:15

801-2 Potential for Cost Savings in High Cost Coronary Bypass Surgery Patients: A New York State Analysis

Patricia A. Cowper, Elizabeth R. DeLong, Eric D. Peterson, Edward L. Hannan, Kevin T. Ray, Michael Racz, James G. Jollis, Daniel B. Mark. *Duke University Medical Center, Durham, NC*

To assess potential for cost savings, we examined the extent and sources