

calcific plaques. In addition, NV was the most powerful independent predictor for disruption, suggesting a cause-effect relationship between NV and progression to disruption in high-risk atherosclerotic plaques.

	High-Risk (n=144)	Disrupted (n=73)	Fibro-Calcific (n=45)	P value
Plaque Inflammation (n) [%]	100 [69]	62 [85]	10 [22]	0.00 01
Fibrous Cap Thickness (μm)	273 \pm 246	34 \pm 16	414 \pm 317	0.00 01
Lipid Core Area (mm^2)	3.5 \pm 3.4	6.5 \pm 3.8	1.9 \pm 2	0.00 01
Neovessels at the Fibrous Cap (total number)	8 \pm 17	7 \pm 14	0.7 \pm 0.5	0.01
Neovessels at the Base of the Plaque (total number)	29 \pm 13	55 \pm 15	22 \pm 10	0.00 01

Multiple Stepwise Logistic Regression Analysis to Predict Plaque Disruption

Predictor	Relative Risk (RR)	95% Confidence Intervals (CI)	P value
Plaque Inflammation	0.3	0.03 - 2.4	0.25
Lipid Core Area	1.13	0.96 - 1.3	0.15
Fibrous Cap Thickness	0.94	0.89 - 0.97	0.00 1
Neovessels at the Base of the Plaque	1.25	1.14 - 1.36	0.00 01

9:30 a.m.

810-2

The Eminently Preventable Pattern of Coronary Heart Disease: Focus on the Four Conventional Risk Factors

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Background: It is commonly believed that more than 50% of patients with coronary heart disease [CHD] lack any of the conventional risk factors [RF] (cigarette smoking, diabetes, hyperlipidemia, hypertension). This implies that other factors play a significant role in CHD and has led to interest in non-traditional RF and genetic causes of CHD. We tested the accuracy of this contention. **Methods:** We compiled data from 14 clinical trials involving 122,458 patients with a wide spectrum of CHD. The prevalence of each conventional RF was calculated and patients were categorized according to their number of RF. **Results:** Patients without any of the four conventional RF constituted 15.4% of women and 19.4% of men. In men <55 years and women <65 years and most patients presenting with either unstable angina or for percutaneous intervention, the prevalence of the conventional RF was even higher, with only 10-15% of patients lacking any of the four conventional RF. This pattern was independent of gender, geographic region, and trial entry criteria. Premature CHD was related to cigarette smoking in both genders and diabetes in women. **Conclusions:** In direct contrast with conventional thinking, 80-90% of patients with CHD have conventional RF. Although research into nontraditional RF and genetic causes of CHD is important, clinical medicine, public health policies, and research efforts should place significant emphasis on the four conventional RF and the lifestyle behaviors that cause them to reduce the epidemic of CHD.

Prevalence of Patients Lacking Conventional Risk Factors by Age

Age	≤ 45	46-55	56-65	66-75	> 75	
N	1215	2624	3452	3450	1504	
	4	0	4	0	0	
% Lacking Conventional Risk Factors	11.1	12.9	16.8	21.4	29.6	p<0.001 for trend

9:45 a.m.

810-3

Prognostic Role of Troponin T and Troponin I in Patients With Acute Coronary Syndromes: Meta-Analysis of 20 Studies

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Background: An elevation of cardiac troponin T (cTnT) or troponin I (cTnI) is predictive of adverse outcomes in patients with non-ST elevation acute coronary syndromes (ACS), defined as unstable angina (UA) or non-Q-wave myocardial infarction. However, differences in the predictive value between cTnT and cTnI may exist. We investigated the

prognostic role of cTnT and cTnI in patients with ACS or UA by means of a meta-analysis.

Methods: 45 studies from 1990 to 2000 were independently reviewed by 2 investigators; 20 studies met the prespecified eligibility criteria. Odds ratio (OR) values were calculated for short-term (30 days) and long-term (≥ 5 months) outcomes in ACS patients, as well as in the subgroup of patients with UA. The primary outcome measure was the composite of death or nonfatal myocardial infarction.

Results: A total of 7,443 patients were included; 4,909 patients were evaluated with a cTnT test and 2,534 with a cTnI test. Predictive values of cTnT and cTnI differed minimally according to a studied population and the follow-up period (Table).

Conclusions: In patients with ACS, cTnT and cTnI elevation predicted similar odds of death or nonfatal myocardial infarction for both short- and long-term follow-up. In the subgroup of patients with UA, cTnT or cTnI elevation predicted higher relative risk of short-term events when compared to the ACS cohort.

Risk of Adverse Cardiac Events Carried by Troponin Elevation

Population	Positive cTnT		Positive cTnI	
	Odds Ratio	95% CI	Odds Ratio	95% CI
ACS (short-term)	4.76	3.48-6.53	3.70	2.50-5.46
ACS (long-term)	2.26	1.71-2.99	3.99	1.57-10.14
UA (short-term)	7.30	5.03-10.60	5.87	3.68-9.36
UA (long-term)	2.42	1.76-3.31	3.99	1.57-10.14

10:00 a.m.

810-4

A Combination of Pro-BNP and Troponin T at Baseline Provide the Best Prediction of Risk of Death and Myocardial Infarction Early After Acute Coronary Syndrome

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Background: Elevated levels of Troponin T (TnT) and Brain Natriuretic peptide (BNP) in the acute stage acute coronary syndromes (ACS) has individually been shown to associated with an increased risk of subsequent clinical events.

Methods: The GUSTO IV ACS trial, evaluating the efficacy of abciximab as the primary medical treatment in ACS without early revascularization, included 7800 patients with chest pain within 24 hours and either ST-segment depression or elevation of troponin at entry. Levels of TnT and pro-BNP in blood samples obtained at randomization were analyzed in 7115 and 6083 patients respectively. The results were related to clinical events at 30-days follow-up.

Results:

	Troponin T	Tertiles of pro-BNP (ng/L)			P (Chi ²)
		<317	317-1201	>1201	
Death (%)	$\leq 0.1 \mu\text{g/L}$	0.7	2.1	6.3	<0.001
	$> 0.1 \mu\text{g/L}$	1.1	2.3	9.6*	<0.001
Death/MI (%)	$\leq 0.1 \mu\text{g/L}$	3.1	6.6	10.3	<0.001
	$> 0.1 \mu\text{g/L}$	5.3*	7.6	14.5*	<0.001

p<0.05 Chi² TnT > 0.1 as compared to $\leq 0.1 \mu\text{g/L}$

In a multiple logistic regression analysis including a large number of known clinical risk factors, TnT and pro-BNP were significant independent predictors of 30-day mortality and the combined endpoint.

Conclusion: In a large cohort of patients with suspected ACS without ST-elevation levels of TnT and and pro-BNP provided independent prognostic information. The combination of the markers provided an even stronger prediction of clinical events in the early phase.

10:15 a.m.

810-5

A Robust Prediction Model for All Forms of Acute Coronary Syndromes: Estimating the Risk of In-Hospital Death and Myocardial Infarction in the Global Registry of Acute Coronary Events Registry

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Background: Risk prediction models have been developed to assist clinicians in estimating risk of untoward outcomes in patients with unstable angina (UA), non-ST segment deviation myocardial infarction (NSTEMI), or ST segment elevation myocardial infarction (STEMI). We previously have developed a model for mortality prediction in patients with acute coronary syndromes (ACS). However, no single model exists that can predict risk of death or recurrent MI (rMI) in all patients presenting with (ACS).

Methods: Using the GRACE database, we developed a multivariate logistic regression model to predict the combined endpoint of death or rMI in 18116 patients (2300 patients