Cholesterol 1,2,3™

Skin Cholesterol: A New Method to Predict Angiographic Disease.

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Background: Using a new rapid, non-invasive skin cholesterol assay, we tested the hypothesis (based on previous invasive methods) that the presence of angiography-proven CAD would be associated with the level of skin cholesterol.

Methods: Skin cholesterol was tested on 241 patients who subsequently underwent diagnostic coronary catheterization. Patients were classified according to whether or not there was any evidence of coronary disease (stenosis >0 in any major coronary vessel). Skin cholesterol levels were determined using the Cholesterol 1,2,3 system (IMI) which non-invasively determines skin cholesterol levels in 3 minutes. Logistic regression models assessed the ability of the skin cholesterol test to predict coronary disease.

Results: Forty-six patients had no coronary disease and 195 had luminal narrowing (n=139 >50%). Skin cholesterol results were higher in the group with disease (102.8 ± 27.6 vs. 90.5 ± 17.8, p<0.001). Patients with disease were older than those without (67 vs. 51 years old, p<0.001, but age and LDL/HDL adjustment did not fully remove the predictive ability of the skin cholesterol test. No correlation was observed between skin cholesterol and the presence of DM, HTN, or BMI.

Conclusion: Patients who exhibit higher skin cholesterol scores are more likely to present with established coronary artery disease. Traditional risk factors such as age and lipid profiles do not explain this correlation. This simple and inexpensive skin cholesterol assay may be useful to help guide clinical decisions about the need for more invasive and expensive diagnostic testing.

Logistic Regression Results

	Odds Ratio (per 10 pt increment)	**95% Confidence Intervals**	**p-value**
Unadjusted	1.25	1.07-1.46	0.005
Age Adjusted	1.20	1.02-1.42	0.028
Age & Lipid Adjusted	1.20	1.02-1.42	0.027