

Skin Cholesterol Adds to Framingham Risk Assessment

Dennis Sprecher M.D., Gregory Pearce Ph.D., University of Pennsylvania, Philadelphia, Pennsylvania.

Introduction: It has been demonstrated that skin cholesterol (SC) is associated with angiographic disease. Now, we further delineate the relative risk of multivessel disease (>50% stenosis in at least two vessels) in the conjoint presence of high SC and high traditional risk burden.

Methods: Patients scheduled for angiography (N=649) had SC measured immediately prior to the procedure. Patients were classified according to the presence of high (>110) SC and high (>10) Framingham global risk scores. Multivariable logistic regression models were used to estimate relative risk of multivessel disease for patients with isolated high skin cholesterol, isolated high Framingham risk or conjoint high skin cholesterol and high Framingham risk (each compared to neither factor elevated).

Results: The mean age was 63 ± 12 years and 33% (n=214) were women. Thirty seven percent (n=237) had angiographically determined multivessel disease. Table 1 shows that both isolated high SC and isolated high Framingham risk tended to infer increased risk of multivessel disease. However, when both scores were elevated, risk of multivessel disease was increased over 4-fold compared to neither elevated.

Table 1. Presence and relative risk of multivessel disease by high Framingham, high Skin Cholesterol.

Framingham, SC	MVDx Rate	Odds Ratio, 95% CI, p-value
$\leq 10, \leq 110$	41/163 (25%)	-
$\leq 10, > 110$	107/313 (34%)	1.55 (1.01-2.36) 0.04
$>10, \leq 110$	23/61 (38%)	1.80 (0.96-3.37) 0.07
$>10, > 110$	66/112 (59%)	4.27 (2.55-7.16) <0.001

Conclusion: We see an independent, additive risk of concurrent multivessel disease when Framingham risk and skin cholesterol are both elevated. Skin cholesterol may have value in further stratifying subjects with Framingham scores >10.