Coronary heart disease (CHD) is usually considered a significant cause of morbidity and mortality in patients who have had a stroke or a transient ischemic attack (TIA).1 Although recurrent strokes occur more commonly than cardiac events over the long term after stroke, cardiac events still account for a greater proportion of mortality.2,3 Identifying severe occult coronary artery stenosis, in particular those with left main trunk or 3-vessel disease, may help to improve prevention of cardiac events in stroke/TIA patients. The prevalence of severe (≥50% reduction in diameter) occult coronary artery stenosis has been reported to be between 18% and 38% in patients with stroke or TIA and no previous history of CHD.3,4 We recently showed that in these patients traditional vascular risk factors, assessed individually or through the Framingham Risk Score (FRS), and the severity of cervicocephalic atherosclerosis are strongly and independently associated with severe coronary artery stenosis detected by 64-section CT angiography.4 These associations have been confirmed in other studies.4,5 The aim of this study was to derive and validate a simple prediction score for severe occult coronary artery stenosis in stroke/TIA patients.

**Background and Purpose**—Identifying occult coronary artery stenosis may improve secondary prevention of stroke patients. The aim of this study was to derive and validate a simple score to predict severe occult coronary artery stenosis in stroke patients.

**Methods**—We derived a score from a French hospital–based cohort of consecutive patients (n=300) who had an ischemic stroke or a transient ischemic attack and no previous history of coronary heart disease (Predicting Asymptomatic Coronary Artery Disease in Patients With Ischemic Stroke and Transient Ischemic Attack [PRECORIS] score) and validated the score in a similar Korean cohort (n=1602). In both cohorts, severe coronary artery stenosis was defined by the presence of at least 1 ≥50% coronary artery stenosis as detected by 64-section CT angiography.

**Results**—A 5-point score (Framingham Risk Score–predicted 10-year coronary heart disease risk [≥20%=3; 10–19%=1; <10%=0] and cervicocephalic artery stenosis [≥50%=2; <50%=1; none=0]) was predictive of occult ≥50% coronary artery stenosis risk in the derivation cohort (C-statistic=0.77 [0.70–0.84]) and in the validation cohort (C-statistic=0.66 [0.63–0.68]). The predictive ability of the score was even stronger when only ≥50% left main trunk disease or 3-vessel disease were considered (C-statistic=0.83 [0.74–0.92] and 0.70 [0.66–0.74] in derivation and validation cohorts, respectively). The prevalence of occult ≥50% coronary artery stenosis and ≥50% left main trunk or 3-vessel disease increased gradually with the PRECORIS score, reaching 44.2% and 13.5% in derivation cohort and 49.8% and 12.8% in validation cohort in patients with a PRECORIS score ≥4.

**Conclusions**—The PRECORIS score can identify a population of stroke or transient ischemic attack patients with a high prevalence of occult severe coronary artery stenosis. (Stroke. 2014;45:82-86.)

**Key Words:** coronary artery disease • risk factors

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DOI: 10.1161/STROKEAHA.113.003414
Methods

Derivation Cohort

The score to PREdict asymptomatic CORonary artery disease in patients with ischemic stroke and TIA (PRECORIS score) was derived from a French hospital–based cohort of 300 consecutive patients with noncardioembolic ischemic stroke or definite TIA admitted to Sainte-Anne Hospital stroke unit (Paris Descartes University, Paris, France) from January 2006 to February 2009. Patients were between 45 and 75 years old and had no previous history of CHD. All patients had a standardized etiologic work-up (Table I in the online-only Data Supplement). Detailed methods of the PRECORIS study have been reported elsewhere.4 The objective of this study was to assess the prevalence of ≥50% occult coronary artery stenosis, detected by 64-section CT, in patients with ischemic stroke or TIA and whether the prevalence is related to traditional vascular risk factors and cervicocephalic atherosclerosis.5

The study was approved by the local ethics committee, and all patients provided informed consent. FRS was calculated for each patient.4 All patients had a detailed standardized etiologic work-up.4 An investigator blinded to clinical data and results of the 64-section CT coronary angiography reviewed all available arterial investigations for the presence of cervicocephalic atherosclerosis. The presence of cervicocephalic atherosclerosis was defined by ≥1 lesion in ≥1 of the following arterial segments: extracranial carotid artery, intracranial carotid artery, extracranial vertebral artery, intracranial vertebral artery, basilar artery, anterior cerebral artery, middle cerebral artery, and posterior cerebral artery. Each arterial segment was classified as normal, <50% stenosis, ≥50% stenosis, or plaque, mild to moderate coronary artery stenosis (1 lesion <50% ≥50%), and severe coronary artery stenosis (≥2 lesions ≥50%).

The study had excellent agreement between 2 investigators for the detection of coronary artery stenosis. The presence of cervical arterial atherosclerosis was assessed using 64-section CT coronary angiography.4,5 We previously reported excellent agreement between 2 investigators for the detection of coronary artery stenosis in segments ≥1.5 mm in diameter.4 In the present study, all 64-section CT coronary angiographies were reviewed by a single experienced radiologist blinded to clinical data and results of cervicocephalic atherosclerosis assessment.

Patients were categorized as having normal coronary arteries (no plaque), mild to moderate coronary artery stenosis (1 lesion <50% and no stenosis ≥50%), and severe coronary artery stenosis (≥2 lesions ≥50%). Among patients with at least 1 ≥50% stenosis, those with ≥50% left main trunk or 3-vessel disease were identified.

Validation Cohort

The PRECORIS score was tested in a Korean hospital–based cohort of 1602 consecutive patients with acute ischemic stroke or TIA admitted to Severance Hospital neurology department (Yonsei University Health System, Seoul, Korea) between July 2006 and September 2012. All patients had a detailed standardized etiologic work-up (Table I in the online-only Data Supplement), and those with no previous history of CHD were asked to undergo 64-section CT examination of coronary arteries if they had at least 1 of the following: (1) presence of atherosclerosis in intracranial or extracranial cerebral arteries; (2) presence of ≥2 risk factors for CHD, such as hypertension, diabetes mellitus, dyslipidemia, cigarette smoking, and central obesity; and (3) old age (men ≥45 years; women ≥55 years). The study was approved by the institutional review board of Severance Hospital, Yonsei University Health System, and informed consent was obtained from all patients. For the purpose of this study, we used data of women between 55 and 75 years old and of men between 45 and 75 years old.6,10 Cervicocephalic atherosclerosis and coronary artery stenosis were categorized using the same criteria as those used in the derivation cohort.6

Statistical Analysis

Parametric and nonparametric comparisons of categorical and continuous variables were done with χ2, t tests, and Mann–Whitney U tests, where appropriate. All significance tests were 2-sided. The score was built using the variables associated with the presence of ≥50% occult coronary artery stenosis in the PRECORIS study, namely the FRS dichotomized into 3 strata (<10%, 10–19%, and 20%–10-year risk of CHD) and the severity of cervicocephalic stenosis, categorized as absent, mild to moderate (≥1 lesion <50% and no stenosis ≥50%), and severe (≥2 lesions ≥50%). The weighted scoring system of the score was based on adjusted odds ratios of predictors in the derivation cohort as follows: FRS-predicted 10-year risk for CHD <10%, 0 point; FRS-predicted 10-year risk for CHD 10% to 19%, 1 point; FRS-predicted 10-year risk for CHD ≥20%, 3 points; cervicocephalic atherosclerosis: none, 0 point; ≥1 stenosis <50% and no stenosis ≥50%, 1 point; ≥2 stenosis ≥50%, 2 points. The overall predictive 5-point score was the sum of these 2 items. The observed risks of ≥50% occult coronary artery stenosis and of left main trunk or 3-vessel disease were assessed separately and stratified according to the PRECORIS score. To quantify the predictive value of the score, we calculated areas under the receiver operating characteristic curve (C-statistic) and 95% confidence intervals (CIs). Ideal discrimination produces a C-statistic of 1.0, whereas discrimination that is no better than chance produces a C statistic of 0.5. We assessed internal validation of the derivation score using 1000 bootstrap replicates. To quantify the predictive value of the severity of cervicocephalic atherosclerosis in addition to FRS, we compared the C-statistic of the 5-point PRECORIS score with that of the 3-point FRS.

Table 1. Score Items in the Derivation (French) and Validation (Korean) Cohorts and Their Respective ORs for the Presence of ≥50% Occult Coronary Artery Stenosis and for the Presence of ≥50% Left Main Trunk or 3-Vessel Disease

<table>
<thead>
<tr>
<th>Derivation Cohort (N=274)</th>
<th>Validation Cohort (N=1593)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥50% Coronary Artery Stenosis</td>
<td>≥50% Left Main Trunk or 3-Vessel Disease*</td>
</tr>
<tr>
<td>Framingham Risk Score</td>
<td></td>
</tr>
<tr>
<td>&lt;10%</td>
<td>7/109</td>
</tr>
<tr>
<td>10% to 19%</td>
<td>18/102</td>
</tr>
<tr>
<td>≥20%</td>
<td>25/63</td>
</tr>
<tr>
<td>Cervicocephalic atherosclerosis</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>6/89</td>
</tr>
<tr>
<td>&lt;50%</td>
<td>19/109</td>
</tr>
<tr>
<td>≥50%</td>
<td>25/76</td>
</tr>
</tbody>
</table>

Cl indicates confidence interval; and OR, odds ratios.

*ORs not calculable because of the absence of patients with left main trunk or 3-vessel disease in the stratum of patients with no cervicocephalic atherosclerosis.
Results
FRS and cervicocephalic atherosclerosis could be assessed in all patients from both cohorts. Sixty-four-section CT coronary angiography was performed in 274 (91.3%) of derivation cohort and in 1593 (99.4%) of validation cohort. Table 1 shows the distribution of patients according to FRS and severity of cervicocephalic atherosclerosis, with corresponding adjusted odds ratios for the presence of ≥50% occult coronary artery stenosis. The 5-point PRECORIS score was 0.66 (95% CI, 0.63–0.68) for left main trunk or 3-vessel disease, according to the PRECORIS score. Patients of the derivation cohort had on average a lower PRECORIS score (mean, 2.0±1.5 versus 2.9±1.5 in validation cohort; P<0.001), a lower prevalence of ≥50% occult coronary artery stenosis (18.3% versus 35.1% in validation cohort; P<0.001), and a lower prevalence of left main trunk or 3-vessel disease (4.0% versus 7.3% in validation cohort; P=0.047).

The prevalence of ≥50% occult coronary artery stenosis and that of left main trunk or 3-vessel disease increased gradually with PRECORIS score in both derivation and validation cohorts (P for trend was <0.001 in both cohorts for both ≥50% occult coronary artery stenosis and left main trunk or 3-vessel disease). In the derivation cohort, the C-statistic of PRECORIS score was 0.77 (95% CI, 0.70–0.84) for ≥50% occult coronary artery stenosis and 0.83 (95% CI, 0.74–0.92) for left main trunk or 3-vessel disease with excellent cross-validation based on 1000 bootstrap replicates (C-statistic=0.77 [95% CI, 0.70–0.83] for ≥50% occult coronary artery stenosis; C-statistic=0.81 [95% CI, 0.75–0.91] for left main trunk or 3-vessel disease). In the validation cohort, the C-statistic was 0.66 (95% CI, 0.63–0.68) for ≥50% occult coronary artery stenosis and 0.70 (95% CI, 0.66–0.74) for left main trunk or 3-vessel disease. The 5-point PRECORIS score was better than the 3-point FRS at predicting the presence of occult ≥50% coronary artery stenosis (C-statistic=0.77 [95% CI, 0.70–0.84] versus 0.72 [95% CI, 0.64–0.80] in the derivation cohort; P=0.03; and C-statistic=0.66 [95% CI, 0.63–0.68] versus 0.63 [95% CI, 0.60–0.66] in the validation cohort; P=0.003). Table II in the online-only Data Supplement shows the predictive value of the score, assessed by C-statistic, for the presence of occult ≥50% coronary artery stenosis according to patient sex, stroke cause, and score items in the derivation and validation cohorts.

Figures 1 and 2 show the prevalence of ≥50% occult coronary artery stenosis and of left main trunk or 3-vessel disease according to PRECORIS score divided into 3 strata (0 or 1; 2 or 3; 4 or 5). Patients with a PRECORIS score ≥4 had similar prevalences of ≥50% occult coronary artery stenosis (44.2% versus 49.8% in the validation cohort; P=0.44) and of left main trunk or 3-vessel disease (13.5% versus 12.8% in the validation cohort; P=0.90). Patients with a PRECORIS score <2 had a low prevalence of left main trunk or 3-vessel disease (0% versus 1.2% in the validation cohort). Figures 3 and 4 show the proportion of patients with ≥50% occult coronary artery stenosis and the proportion of patients with left main trunk or 3-vessel disease that could be identified according to PRECORIS score cutoffs. For example, using a cutoff ≥4, the PRECORIS score could identify 46.0% (derivation cohort) and 48.7% (validation cohort) of patients with ≥50% occult coronary artery stenosis, and 63.7% and 60.3% of those with left main trunk or 3-vessel disease. Patients with a PRECORIS score ≥4 accounted for 19.0% of derivation cohort and 34.3% of validation cohort.

Discussion
We derived and validated a simple score—the PRECORIS score—based on FRS and severity of cervicocephalic atherosclerosis to predict the risk of ≥50% occult coronary artery

Table 2. Prevalence of ≥50% Occult Coronary Artery Stenosis and of ≥50% Left Main Trunk or 3-Vessel Disease According to PRECORIS Score Strata in Derivation (n=274) and Validation (n=1593) Patients

<table>
<thead>
<tr>
<th>PRECORIS Score</th>
<th>Patients of Derivation Cohort, n (%)</th>
<th>≥50% Occult Coronary Artery Stenosis, n (Prevalence, 95% CI)</th>
<th>Left Main Trunk and 3-Vessel Disease, n (Prevalence, 95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>45 (16.4)</td>
<td>1 (2.2, 0–6.5)</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>75 (27.4)</td>
<td>5 (6.7, 1.0–12.4)</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>63 (23.0)</td>
<td>11 (17.5, 9.4–26.9)</td>
<td>3 (4.8, 0–10.0)</td>
</tr>
<tr>
<td>3</td>
<td>39 (14.2)</td>
<td>10 (25.6, 14.8–36.4)</td>
<td>1 (2.6, 0–6.5)</td>
</tr>
<tr>
<td>4</td>
<td>26 (9.5)</td>
<td>10 (38.5, 19.8–57.2)</td>
<td>3 (11.5, 0–23.8)</td>
</tr>
<tr>
<td>5</td>
<td>26 (9.5)</td>
<td>13 (50.0, 30.8–69.2)</td>
<td>4 (15.5, 1.5–29.2)</td>
</tr>
<tr>
<td>Total</td>
<td>274 (100)</td>
<td>50 (18.3, 13.7–22.8)</td>
<td>11 (4.0, 1.7–6.3)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Patients of the Validation Cohort, n (%)</th>
<th>≥50% Occult Coronary Artery Stenosis, n (Prevalence, 95% CI)</th>
<th>Left Main Trunk and 3-Vessel Disease, n (Prevalence, 95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>98 (6.2)</td>
<td>14 (14.3, 7.4–21.2)</td>
</tr>
<tr>
<td>1</td>
<td>236 (14.8)</td>
<td>48 (20.3, 15.1–25.4)</td>
</tr>
<tr>
<td>2</td>
<td>278 (17.5)</td>
<td>66 (23.7, 18.7–28.7)</td>
</tr>
<tr>
<td>3</td>
<td>435 (27.3)</td>
<td>159 (36.6, 32.1–41.1)</td>
</tr>
<tr>
<td>4</td>
<td>158 (9.9)</td>
<td>73 (46.2, 38.4–54.0)</td>
</tr>
<tr>
<td>5</td>
<td>388 (24.4)</td>
<td>199 (51.3, 46.3–56.3)</td>
</tr>
<tr>
<td>Total</td>
<td>1593 (100)</td>
<td>559 (35.1, 32.8–37.4)</td>
</tr>
</tbody>
</table>

CI indicates confidence interval.
stenois in patients who present with an ischemic stroke or a TIA. The PRECORIS score had a good predictive ability to identify patients with ≥50% occult coronary artery stenosis, in particular those with left main trunk or 3-vessel disease.

A few studies have recently assessed the prevalence of severe coronary artery stenosis in patients with ischemic stroke or TIA and no previous history of CHD; the prevalence of ≥50% coronary artery stenosis ranged from 18% to 38% using 64-section CT,4,7,11 conventional angiography,12 or autopsy.13 As in our study, the prevalence of ≥50% occult coronary artery stenosis was lower in European (18–26%)4,5 than in Asian cohorts (32–38%).6,7 A rapid increase in CHD incidence has been observed in the Asia Pacific region,14,15 and increases in levels of risk factors seem to account for a substantial amount of CHD increase.14 In our study, Korean patients had a higher PRECORIS score compared with French patients. This higher burden of vascular risk factors, together with a potential greater susceptibility of Asian subjects to proatherogenic effects of traditional vascular risks factors, could have accounted for the higher prevalence of severe occult coronary artery stenosis in Korean patients.16,17

The finding that a score based on FRS and severity of carotid atherosclerosis had a good predictive ability to identify patients with severe occult coronary artery stenosis is consistent with recent studies,18 showing that in patients with ischemic stroke and no known CHD, a high FRS (≥20%) and presence of a carotid stenosis are associated with a higher risk of subsequent coronary events and vascular death.19,20 These findings also support recommendations to consider patients with atherosclerotic stroke to be at high risk (≥20% over 10 years) of further atherosclerotic coronary events.21

However, the optimal management of patients with asymptomatic coronary artery stenosis is unresolved.1,22–24 In particular, systematic revascularization of patients with occult coronary artery stenosis is not recommended.23,24 In contrast, there is some evidence for benefit of revascularization in patients with left main trunk or 3-vessel disease.25–27 The high predictive ability of the PRECORIS score to identify patients with the most severe occult coronary artery stenosis, in particular those with left main trunk or 3-vessel disease, is of interest. Beyond potential benefit of specific revascularization treatment, identification of such high-risk patients may also improve compliance and adherence to risk-modifying interventions.26

Our study has potential limitations. The PRECORIS score was derived and validated in hospital-based cohorts of patients between 45 and 75 years of age who had noncardioembolic ischemic stroke or definite TIA. The generalizability of the score remains to be confirmed in further studies. A potential selection bias might have altered the prevalence of severe occult coronary stenosis, but it is unlikely that this potential...
bias would affect the relative effects observed in both popu-
lations and the predictive ability of the PRECORIS score to
detect occult severe coronary artery stenosis. In fact, we showed
that the PRECORIS score has a good predictive ability in both
derivation and validation cohorts, in which the prevalence of
severe occult coronary artery stenosis differed substantially.

In conclusion, our study cannot address the value of screen-
ing for occult severe coronary artery stenosis in patients who
had a stroke or a TIA. However, our study emphasizes the
possibility of identifying ischemic stroke or TIA patients with
a high prevalence of severe occult coronary artery stenosis,
particularly those with left main trunk or 3-vessel disease.
The PRECORIS score based on easily available parameters
may be useful to target a population of ischemic stroke or
TIA patients in whom the usefulness of screening for severe
occult coronary artery stenosis could be specifically assessed
through a randomized controlled trial.

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Disclosures
None.

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Predicting Asymptomatic Coronary Artery Disease in Patients With Ischemic Stroke and Transient Ischemic Attack: The PRECORIS Score

David Calvet, Dongbeom Song, Joonsang Yoo, Guillaume Turc, Jean-Louis Sablayrolles, Byoung Wook Choi, Ji Hoe Heo and Jean-Louis Mas

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### Supplementary Table I – Details on derivation and validation cohorts and standardized etiological work-up performed in cohorts

<table>
<thead>
<tr>
<th>Study</th>
<th>Derivation cohort</th>
<th>Validation cohort</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Included / Analysed patients (n)</strong></td>
<td>300 / 274</td>
<td>1602 / 1593</td>
</tr>
<tr>
<td><strong>Period of inclusion</strong></td>
<td>January 06 to February 09</td>
<td>July 06 to September 12</td>
</tr>
<tr>
<td><strong>Brain imaging</strong></td>
<td>100% (MRI* in 99%)</td>
<td>100% (MRI* in 99%)</td>
</tr>
<tr>
<td><strong>Arterial work-up</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cervical and transcranial Doppler ultrasound</td>
<td>100%</td>
<td>73%</td>
</tr>
<tr>
<td>3-D TOF† MRA‡ of the circle of Willis</td>
<td>99%</td>
<td>90%</td>
</tr>
<tr>
<td>Cervical gadolinium-enhanced MRA‡</td>
<td>96%</td>
<td>90%</td>
</tr>
<tr>
<td>64-section CT § angiography</td>
<td>4%</td>
<td>43%</td>
</tr>
<tr>
<td>Conventional angiography</td>
<td>3%</td>
<td>25%</td>
</tr>
<tr>
<td><strong>Cardiac investigations</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12-lead ECG</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Prolonged 3-lead cardiac monitoring</td>
<td>100%</td>
<td>79%#</td>
</tr>
<tr>
<td>Echocardiography</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transthoracic</td>
<td>100%</td>
<td>20%</td>
</tr>
<tr>
<td>Transesophageal</td>
<td>96%</td>
<td>57%</td>
</tr>
<tr>
<td><strong>Coronary artery atherosclerosis</strong></td>
<td>64-section CT</td>
<td>64-section CT</td>
</tr>
<tr>
<td>assessment</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Median Time interval between stroke and CT coronary angiography</strong></td>
<td>68 days</td>
<td>4 days</td>
</tr>
</tbody>
</table>
In case of contraindication to magnetic resonance angiography or discrepancies between Doppler ultrasound and magnetic resonance angiography, 8% additional patients had Holter without prolonged 3-lead cardiac monitoring.
Supplementary Table II - Predictive value of the score for the presence of occult ≥50% coronary artery stenosis according to patient gender, stroke cause, and score items in the derivation and validation cohorts. ONLINE SUPPLEMENT

<table>
<thead>
<tr>
<th></th>
<th>Derivation cohort c statistic (95% CI)</th>
<th>Validation cohort c statistic (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Patients</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>0.72 (0.64-0.80)</td>
<td>0.65 (0.61-0.68)</td>
</tr>
<tr>
<td>Women</td>
<td>0.80 (0.53-1.00)</td>
<td>0.62 (0.57-0.68)</td>
</tr>
<tr>
<td><strong>Stroke cause</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small vessel disease</td>
<td>0.81 (0.67-0.96)</td>
<td>0.74 (0.66-0.82)</td>
</tr>
<tr>
<td>Large artery</td>
<td>0.60 (0.44-0.74)</td>
<td>0.65 (0.58-0.71)</td>
</tr>
<tr>
<td>Undetermined</td>
<td>0.76 (0.64-0.87)</td>
<td>0.63 (0.59-0.66)</td>
</tr>
<tr>
<td><strong>Score</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRECORIS score</td>
<td>0.77 (0.70-0.84)</td>
<td>0.66 (0.63-0.68)</td>
</tr>
<tr>
<td>Framingham Risk Score*</td>
<td>0.72 (0.64-0.80)</td>
<td>0.63 (0.60-0.66)</td>
</tr>
<tr>
<td>PRECORIS score using cervical rather than cervicocephalic atherosclerosis</td>
<td>0.76 (0.70-0.83)</td>
<td>0.67 (0.64-0.70)</td>
</tr>
<tr>
<td>PRECORIS score using the severity and the extent of cervicocephalic atherosclerosis†</td>
<td>0.77 (0.71-0.84)</td>
<td>0.66 (0.63-0.69)</td>
</tr>
</tbody>
</table>

* dichotomized into 3 strata (as in the PRECORIS score)
† The severity and the extent of cervicocephalic atherosclerosis were classified as follows: normal, 1 stenosis <50%, ≥2 stenosis <50%, 1 stenosis ≥ 50%, and ≥2 stenosis ≥ 50%.