Prediction of Coronary Heart Disease by Erectile Dysfunction in Men Referred for Nuclear Stress Testing

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Background: Recent evidence suggests a strong link between erectile dysfunction (ED) and atherosclerotic vascular disease. Stress myocardial perfusion single-photon emission computed tomography (MPS) is a widely used noninvasive imaging modality that allows diagnosis of coronary heart disease and stratification of cardiovascular risk. We sought to determine the relationship between ED and coronary heart disease in men referred for MPS.

Methods: A total of 221 men referred for MPS were prospectively screened for ED with a validated questionnaire. Patient characteristics, MPS findings, and exercise results were correlated with ED.

Results: Erectile dysfunction was present in 54.8% of the patients. Patients with ED exhibited more severe coronary heart disease (MPS summed stress score >8) (43.0% vs 17.0%; $P<.001$) and left ventricular dysfunction (left ventricular ejection fraction <50%) (24.0% vs 11.0%; $P=.01$) than those without ED. Erectile dysfunction was associated with a shorter exercise time (8.0 vs 10.1 minutes; $P<.001$) and lower Duke treadmill score (4.4 vs 8.4; $P<.001$). Multivariate analysis showed ED to be an independent predictor of severe coronary heart disease (odds ratio, 2.50; 95% confidence interval, 1.24-5.04; $P = .01$) and high-risk MPS findings (summed stress score >8, transient ischemic dilation, or left ventricular ejection fraction <35%) (odds ratio, 2.86; 95% confidence interval, 1.43-5.74; $P = .003$).

Conclusions: Erectile dysfunction is common in men referred for MPS, is associated with markers of adverse cardiovascular prognosis, and is an independent predictor of severe coronary heart disease and high-risk MPS findings. These results suggest that questioning about sexual function may be a useful tool for stratifying risk in individuals with suspected coronary heart disease.

Arch Intern Med. 2006;166:201-206

ERECTILE DYSFUNCTION (ED) is estimated to affect approximately 100 million men worldwide and more than half of US men aged 40 to 70 years.[1] Erectile dysfunction and atherosclerosis share similar risk factors, and recent evidence suggests a strong link between ED and atherosclerotic vascular disease.[2-20] In diabetic patients, ED has been shown to predict silent coronary artery disease, and in asymptomatic men without cardiovascular risk factors or known vascular disease, ED is associated with abnormal endothelial function as measured by brachial reactivity testing.[20,21] These results suggest that ED may be an early marker of vascular disease. Whether the presence of ED is a marker for a poor cardiovascular prognosis is unknown.

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Stress myocardial perfusion single-photon emission computed tomography (MPS) is a widely used noninvasive imaging modality that allows identification of patients with coronary heart disease and permits stratification of cardiovascular prognosis.[22] Findings on MPS, including extent, severity, and reversibility of perfusion defects and left ventricular ejection fraction, predict future fatal and nonfatal cardiovascular events.[22] Whether ED predicts the presence of coronary heart disease as determined by MPS, and thus is associated with established markers of adverse cardiovascular prognosis, is unknown. Our goal was to study the association between ED and the findings on MPS in patients referred for MPS.

METHODS

Two hundred twenty-one male patients (mean age, 58.6 years; range, 23-88 years) referred for myocardial perfusion stress testing (exercise or pharmacologic [adenosine]) between Janu-

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ary 1, 2004, and October 31, 2004, were prospectively screened for ED with a validated questionnaire (International Index of Erectile Function).[23-25] Patients were excluded if they had a history of prostate and/or penile surgery.

Cardiovascular risk factors, comorbidities, and medications were recorded for all participants. The study protocol was approved by the hospital's institutional review board, and all patients gave informed consent. All patients underwent clinically indicated MPS as ordered by their referring physician.

MYOCARDIAL PERFUSION TESTING AND QUANTIFICATION

Standard dual-isotope stress and resting MPS was performed with thallous chloride Tl 201 and technetium Tc 99m (^{99m}Tc) tetrofosmin, respectively. Single-photon emission computed tomographic images were acquired with a dual-headed, large field-of-view, rotating gamma camera equipped with a high-resolution, parallel-hole collimator (CardiaL; Elgems, Waukesha, Wis). Resting scans were obtained approximately 10 minutes after intravenous injection of 3.0 to 4.5 mCi (111-167 MBq) of thallous chloride Tl 201. Stress scans were obtained 15 to 60 minutes after peak stress injection of 24 to 36 mCi (888-1332 MBq) of ^{99m}Tc tetrofosmin for exercise tests or 3 minutes into a 6-minute intravenous adenosine infusion, 140 mg/kg per minute, for pharmacologic tests. Resting left ventricular ejection fraction was determined from electrocardiographic gating of the ^{99m}Tc MPS scans and analyzed by means of image inversion software.

Whenever feasible, β-blockers and calcium channel blockers were discontinued for 24 to 48 hours before the administration of the treadmill stress test. All patients scheduled for exercise testing underwent symptom-limited treadmill exercise testing by means of a Bruce protocol. An ischemic electrocardiogram response was defined as 1-mm or greater ST-segment depression occurring 80 milliseconds after the J point. The Duke treadmill score was calculated for individuals undergoing exercise testing as described previously.[26] The Duke treadmill score was calculated in subjects who exercised and was defined as low risk (≥5), intermediate risk (–10 to 4), and high risk (≤–11).

The test was terminated if there were significant arrhythmias, hypotension, excessive chest pain, fatigue, or shortness of breath. Maximal heart rate achieved, total duration on the treadmill, peak pressure product, and metabolic equivalents were recorded for each individual.

Patients underwent pharmacologic testing if they were deemed by the referring physician to be unable to perform exercise or unable to achieve an adequate level of exercise (ie, <85% of the maximal predicted heart rate), or if their resting electrocardiogram disclosed a left bundle-branch block pattern. Patients were instructed to take nothing by mouth before the stress test, specifically avoiding any methylxanthine derivatives.

Myocardial perfusion interpretation was performed at the time of clinical study by 1 of 4 experienced expert readers (2 of whom were K.A.W. and R.P.W.) blinded to the results of the ED questionnaire; they used the American Society of Nuclear Cardiology–approved protocol with the 17-segment model. Summed stress score, summed rest score, summed difference score, and presence of transient ischemic dilation were determined for all patients.[22] Any left ventricular dysfunction was defined as a left ventricular ejection fraction less than 50%. Marked left ventricular dysfunction was defined as a left ventricular ejection fraction less than 35%. Composite end points of any high-risk finding (summed stress score >8, transient ischemic dilation of the left ventricle, or a left ventricular ejection fraction <35%) were also recorded.

DIAGNOSIS OF ED

Erectile dysfunction was diagnosed by means of the 15-item validated International Index of Erectile Function questionnaire.[23-25] This questionnaire assesses 5 distinct domains of sexual function, including erectile dysfunction, overall sexual satisfaction, intercourse satisfaction, orgasmic function, and sexual desire. Erectile dysfunction was defined as a score of less than 25 on a 30-point scale, consistent with previous studies.[23-25]

STATISTICAL ANALYSIS

Comparisons of baseline characteristics and findings on MPS for patients with and without ED were performed with the χ^2 test for categorical variables and the *t* test for continuous variables using a 2-tailed $P<.05$ for statistical significance. Multivariate logistic regression analysis was performed to determine the effect of ED and other baseline characteristics on the occurrence of severe coronary heart disease (summed stress score >8), and the composite end point of any high-risk MPS finding. Age, hypertension, diabetes mellitus, referral for pharmacologic testing, and any other baseline characteristics found to be univariate predictors of summed stress score greater than 8 or any high-risk finding to $P<.10$, were entered into a multivariate model for each of these end points. Odds ratios (ORs) were calculated, and the results are presented as ORs with 95% confidence intervals (CIs). Disease effect modification testing was performed and did not reach statistical significance, and thus it was not included in the final models.

RESULTS

Overall, 121 patients (54.8%) in the study group were found to have ED. Baseline patient characteristics of those with and without ED are listed in **Table 1**. There was a high prevalence of cardiovascular comorbidities in the study group, including diabetes mellitus (26.7%), hypertension (59.7%), and previous coronary revascularization, defined as percutaneous angioplasty or coronary artery bypass surgery (21.3%). In comparison with those without ED, patients with ED were older and had higher rates of diabetes mellitus, hypertension, and previous revascularization. Other baseline characteristics were similar.

Overall, 36.7% of the study group underwent pharmacologic testing and 63.3% underwent exercise testing. Patients with ED were more likely to be referred for pharmacologic testing than those without ED (50.4% vs 20.0%; $P<.001$). Among patients who exercised, results of treadmill testing are listed in **Table 2**. Compared with patients without ED, patients with ED had shorter exercise time and lower Duke treadmill scores. Individuals without ED were significantly more likely to achieve a low-risk Duke treadmill score, whereas individuals with ED were significantly more likely to exhibit an intermediate- or high-risk Duke treadmill score ($P=.001$) (Table 2).

Results of MPS are listed in **Table 3**. Compared with patients without ED, patients with ED had more mild or greater coronary heart disease (summed stress score ≥4), severe coronary heart disease (summed stress score >8), higher summed rest and summed difference scores, more left ventricular dysfunction (ejection fraction <50%), and trends toward more marked left ventricular dysfunction

Table 1. Baseline Characteristics of Patients Referred for Stress Myocardial Perfusion Testing by Erectile Function Classification

Characteristic	Total (N = 221)	Erectile Dysfunction (n = 121)	No Erectile Dysfunction (n = 100)	*P* Value*
Age, mean (range), y	58.6 (23-88)	62.9 (32-88)	53.5 (23-81)	<.001
Diabetes mellitus, %	26.7	37.2	14.0	<.001
Hypertension, %	59.7	71.9	45.0	<.001
Hyperlipidemia, %	51.6	54.5	48.0	.33
Tobacco use, mean (range), pack-years	10.3 (0-100)	11.0 (0-100)	9.4 (0-80)	.52
Tobacco use (any), %	40.1	38.8	43.0	.53
BMI, mean (range)	29.4 (18-57)	29.5 (18-57)	29.1 (20-45)	.67
Previous coronary revascularization, %†	21.3	28.1	13.0	.006
PAD, %	8.6	8.3	9.0	.85
Medication use, %				
β-Blockers	29.4	35.5	22.0	.03
Antiplatelet agents	62.9	72.7	51.0	.001
Other antihypertensive medicines	49.8	62.0	35.0	<.001
Statins	50.2	54.5	45.0	.16
Diuretics	18.1	21.5	14.0	.15

Abbreviations: BMI, body mass index (calculated as weight in kilograms divided by the square of height in meters); PAD, peripheral arterial disease.
*Erectile dysfunction vs no erectile dysfunction groups.
†Defined as previous percutaneous intervention or coronary bypass surgery.

Table 2. Exercise Stress Results in Patients Referred for Exercise Stress Myocardial Perfusion Testing by Erectile Function Classification

Measure	Erectile Dysfunction	No Erectile Dysfunction	*P* Value*
Exercise time, mean (range), min	8.0 (2 to 17)	10.1 (5 to 16)	<.001
Metabolic equivalents achieved, mean (range)	9.2 (3 to 17)	11.4 (7 to 17)	<.001
ECG positive, %†	20.0	16.3	.57
Chest pain, %	15.0	10.0	.37
Duke treadmill score, mean (range)	4.4 (–16 to 17)	8.4 (–8 to 16)	<.001
Intermediate-/high-risk Duke treadmill score, %‡	40.0	16.3	.001

Abbreviation: ECG, electrocardiogram.
*Erectile dysfunction vs no erectile dysfunction groups.
†Defined as exercise ECG response of 1 mm or more of ST-segment depression occurring 80 milliseconds after the J point.
‡Defined as a Duke treadmill score less than 5.

Table 3. Myocardial Perfusion Imaging Findings in Patients Referred for Stress Myocardial Perfusion Testing by Erectile Function Classification

Measure	Erectile Dysfunction (n = 121)	No Erectile Dysfunction (n = 100)	*P* Value*
Summed stress score ≥4, %	63.6	49.0	.03
Summed stress score >8, %	43.0	17.0	<.001
TID, %	10.1	2.8	.07
Summed stress score, mean (range)	8.8 (0-35)	5.3 (0-33)	.001
Summed difference score, mean (range)	5.9 (0-25)	4.3 (0-33)	.02
Summed rest score, mean (range)	2.9 (0-26)	1.0 (0-27)	.005
LV ejection fraction <50%, %	24.0	11.0	.01
LV ejection fraction <35%, %	13.2	6.0	.07
Diastolic filling rate, mean (range), mL/s	2.46 (0.6-5.0)	2.54 (0.7-5.2)	.52
Any high-risk finding, %†	47.1	17.0	<.001

Abbreviations: LV, left ventricular; TID, transient ischemic dilation.
*Erectile dysfunction vs no erectile dysfunction groups.
†Includes summed stress score greater than 8, LV ejection fraction less than 35%, or TID.

(ejection fraction <35%) and transient ischemic dilation (**Figure 1**).

The association between ED and MPS findings in specific subgroups are displayed in **Table 4**. Erectile dysfunction was associated with more severe coronary heart disease (summed stress score >8) in subgroups of patients referred for exercise; patients without previous revascularization, diabetes, hypertension, or β-blocker use; and patients with normal ejection fractions. Erectile dysfunction was associated with more left ventricular dysfunction (ejection fraction <50%) in subgroups of patients without previous revascularization, diabetes, or β-blocker use.

Characteristics found to be univariate predictors of summed stress score greater than 8 or any high-risk finding are presented in **Table 5**. On multivariate logistic regression analysis, after adjusting for referral for pharmacologic testing, age, hypertension, diabetes mellitus, tobacco use, hyperlipidemia, previous revascularization, and medication use, ED was found to be an independent predictor of summed stress score greater than 8 (OR, 2.50; 95% CI, 1.24-5.04; *P*=.01) or any high-risk finding (OR, 2.86; 95% CI, 1.43-5.74; *P*=.003) (**Figure 2**). Other factors found to be significant independent predictors for each of these end points are also shown in the final multivariate models displayed in Figure 2. Among the subgroup of patients without previous revascularization, on multivariate logistic analysis adjusting for referral for pharmacologic testing, age, hypertension, diabetes mellitus, tobacco use, hyperlipidemia, and medication use, ED remained an independent predictor of summed stress score

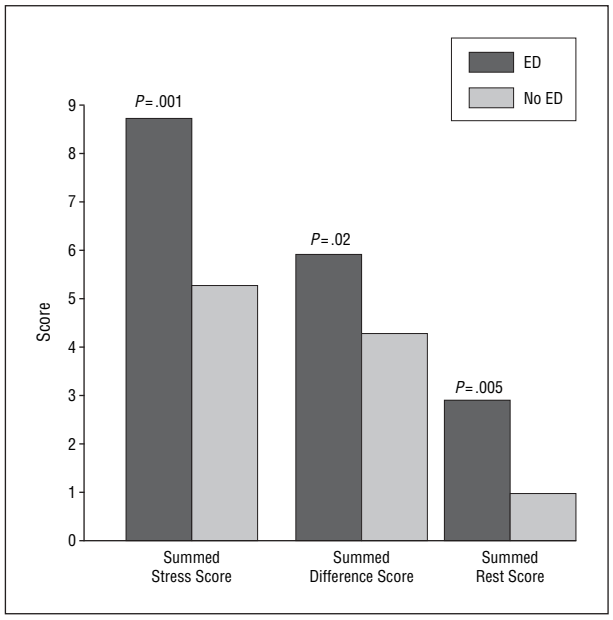

Figure 1. Myocardial perfusion imaging findings in patients referred for stress myocardial perfusion testing by erectile function classification. ED indicates erectile dysfunction.

greater than 8 (OR, 2.89; 95% CI, 1.26-6.58; $P=.01$) and any high-risk finding (OR, 3.43; 95% CI, 1.51-7.83; $P=.003$).

Table 4. Subgroup Analysis of Patients Referred for Stress Myocardial Perfusion Testing by Erectile Function Classification

Subgroup	Erectile Dysfunction	No Erectile Dysfunction	*P* Value*
No previous coronary revascularization, No. (%)	n = 87	n = 87	
Summed stress score ≥4	49 (56)	41 (47)	.23
Summed stress score >8	31 (36)	11 (13)	<.001
LV ejection fraction <50%	18 (21)	8 (9)	.03
Exercise only, No. (%)	n = 60	n = 80	
Summed stress score ≥4	33 (55)	40 (50)	.56
Summed stress score >8	21 (35)	11 (14)	.003
LV ejection fraction <50%	9 (15)	5 (6)	.09
No diabetes, No. (%)	n = 76	n = 86	
Summed stress score ≥4	49 (65)	38 (44)	.01
Summed stress score >8	35 (46)	11 (13)	<.001
LV ejection fraction <50%	18 (24)	8 (9)	.01
No β-blocker, No. (%)	n = 78	n = 78	
Summed stress score ≥4	46 (59)	34 (44)	.06
Summed stress score >8	25 (32)	8 (10)	.001
LV ejection fraction <50%	15 (19)	6 (8)	.03
No hypertension, No. (%)	n = 34	n = 55	
Summed stress score ≥4	20 (59)	24 (44)	.16
Summed stress score >8	14 (41)	6 (11)	.001
LV ejection fraction <50%	6 (18)	3 (6)	.06
Normal LV function, No. (%)†	n = 92	n = 89	
Summed stress score ≥4	51 (55)	39 (44)	.12
Summed stress score >8	29 (32)	9 (10)	<.001

Abbreviation: LV, left ventricular.
*Erectile dysfunction vs no erectile dysfunction groups.
†Defined as LV ejection fraction of 50% or greater.

COMMENT

Our findings suggest that ED in male patients referred for MPS is a strong independent predictor of clinically important abnormalities on nuclear stress testing, including severe coronary heart disease and combined MPS findings associated with a high cardiovascular risk. Although ED has been linked to vascular disease in other populations previously, to our knowledge this study is the first to associate ED with coronary heart disease as determined by MPS and the first to associate ED with established markers of adverse cardiovascular prognosis.

Patients referred for stress MPS were found to have a high prevalence of ED, and patients with ED exhibited a higher prevalence of severe coronary heart disease, mild or greater coronary heart disease, and left ventricular dysfunction than those without ED. Among the subgroup of patients without previous coronary revascularization (thus, patients without established significant coronary artery disease), ED remained associated with a higher prevalence of severe coronary heart disease and left ventricular dysfunction. The definitions for mild or greater coronary heart disease (summed stress score ≥4) and severe coronary heart disease (summed stress score >8) were chosen because these values have previously been shown to clearly establish cardiovascular risk stratification in patients both with and without previously known coronary artery disease referred for MPS. A summed stress score greater than 8 is strongly associated with clinically significant obstructive coronary artery disease and a high risk of both cardiac death and nonfatal myocardial infarction.[27,28] Mild coronary heart disease, as defined by a summed stress score of 4 to 8, is associated with an increased risk of nonfatal myocardial infarction, although not a significantly increased risk of cardiac death, compared with patients with summed stress scores less than 4.[28] Previous studies have demonstrated that a summed stress score greater than 8 is associated with improved outcomes with an invasive management strategy, as opposed to medical management alone,[27,28] and thus serves as a widely recognized inflection point for referral for coronary angiography. Left ventricular dysfunction, as determined by gated MPS imaging, is established as a potent risk factor for cardiovascular death with important therapeutic implications.[22,29-33] Transient ischemic dilation on MPS imaging is thought to be due to global left ventricular hypoperfusion. This finding has been correlated with multivessel coronary artery disease, as well as an adverse cardiovascular prognosis, even in patients with apparently normal myocardial perfusion on MPS.[34]

Our results suggest that ED was a strong pretest predictor of severe coronary heart disease (summed stress score >8) in both the entire study group and the subgroup without established significant coronary artery disease. Perhaps more importantly, we found that ED in this population is a stronger independent predictor of findings on MPS, which have clearly been associated with a high cardiovascular risk. Erectile dysfunction was a stronger predictor of both severe coronary heart disease and the composite of high-risk findings than traditional office-based cardiovascular risk factors. It remained a strong independent predictor of high-risk MPS findings even in patients without

Table 5. Patient Characteristics as Univariate Predictors of Severe Coronary Heart Disease and Any High-Risk Finding in Patients Referred for Stress Myocardial Perfusion Stress Testing*

Patient Characteristic	Summed Stress Score >8		Any High-Risk Finding	
	OR (95% CI)	*P* Value	OR (95% CI)	*P* Value
Age†	1.04 (1.02-1.07)	.001	1.04 (1.02-1.07)	<.001
BMI	0.97 (0.93-1.02)	.28	0.99 (0.94-1.03)	.50
Tobacco use† (any)	1.82 (1.02-3.23)	.04	1.77 (1.01-3.13)	.05
Obesity‡	1.16 (0.64-2.10)	.64	1.29 (0.72-2.30)	.41
Diabetes mellitus†	1.61 (0.86-3.01)	.13	2.06 (1.12-3.82)	.02
Hyperlipidemia†	2.06 (1.15-3.70)	.02	2.08 (1.17-3.69)	.01
Hypertension†	2.04 (1.11-3.75)	.02	2.39 (1.30-4.38)	.005
Statin use†	3.23 (1.76-5.92)	<.001	2.94 (1.63-5.28)	<.001
Antiplatelet agent use†	3.18 (1.63-6.20)	<.001	3.29 (1.71-6.33)	<.001
β-Blocker use†	4.63 (2.48-8.62)	<.001	4.25 (2.30-8.85)	<.001
Other antihypertensive use†	2.10 (1.17-3.76)	.01	2.32 (1.31-4.13)	.004
Diuretic use†	2.03 (1.02-4.02)	.04	2.25 (1.14-4.44)	.02
PAD	2.69 (1.04-6.97)	.04	3.03 (1.16-7.91)	.02
Previous coronary revascularization†	4.24 (2.16-8.33)	<.001	4.10 (2.10-8.04)	<.001
Referred for pharmacologic testing†	2.84 (1.58-5.11)	<.001	3.63 (2.02-6.54)	<.001
Erectile dysfunction†	3.67 (1.95-6.93)	<.001	4.35 (2.31-8.18)	<.001

Abbreviations: BMI, body mass index (calculated as weight in kilograms divided by the square of height in meters); CI, confidence interval; OR, odds ratio; PAD, peripheral arterial disease.

*Severe coronary heart disease was defined as summed stress score greater than 8; and any high-risk finding, as summed stress score greater than 8, left ventricular ejection fraction less than 35%, or transient ischemic dilation.

†Patient characteristics included in multivariate logistic regression models.

‡Obesity was defined as a BMI greater than 30.0.

established coronary artery disease, suggesting that it may represent an early marker of coronary heart disease.

We found that the presence of ED is associated with traditional coronary heart disease risk factors, as has been demonstrated previously.[2-20] The presence of ED was associated with the presence of diabetes mellitus, dyslipidemia, hypertension, and advanced age. Erectile dysfunction was also associated with an increased rate of referral for pharmacologic stress testing. Referral for pharmacologic testing itself has been established as a marker for increased cardiovascular risk, compared with patients referred for exercise testing,[35] and our findings are consistent with this observation. Moreover, in individuals with ED who were referred for exercise stress testing, the presence of ED was associated with several findings that portend an increased cardiovascular risk, including a significantly lower Duke treadmill score than in patients without ED.[36] When exercise capacity alone was examined, patients without ED achieved longer exercise times and achieved higher metabolic equivalents than those without ED. Previous studies have correlated lower functional capacity with a 24% increased risk of all-cause mortality over 2.5 years.[26,36]

Why the presence of ED exists as such a strong predictor of coronary heart disease as determined by MPS is uncertain. It is well established that coronary artery disease correlates with the presence of atherosclerotic arterial disease in other vascular beds.[8,11,19,21,37] Erectile dysfunction has been demonstrated to share a common profile of risk factors with coronary artery disease that includes diabetes, hypertension, cigarette smoking, and hyperlipidemia.[2-20] As the penile arteries are relatively small in comparison with the coronary arteries, they may be more prone to cause ED with even comparatively small amounts of atherosclerosis. Another possibility is that ED is a barometer of global vascular impairment. Kaiser and colleagues[21] recently demonstrated that patients with ED exhibit a widespread peripheral vascular defect in both endothelium-dependent and endothelium-independent vasodilation that appears to precede the onset of clinically overt coronary artery disease.

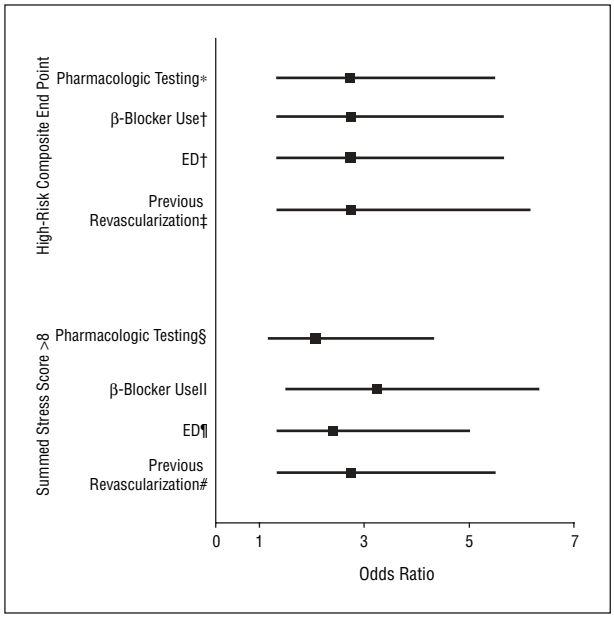

Figure 2. Final multivariate logistic regression models demonstrating independent predictors of severe coronary heart disease (summed stress score >8), and the composite of any high-risk finding in patients referred for myocardial perfusion stress testing. ED indicates erectile dysfunction; asterisk, *P*=.002; dagger, *P*=.003; double dagger, *P*=.008; section mark, *P*=.03; parallel mark, *P*=.001; paragraph symbol, *P*=.01; pound sign, *P*=.009; and limit lines, 95% confidence interval. High-risk composite end point includes summed stress score greater than 8, left ventricular ejection fraction less than 35%, and transient ischemic dilation.

As our study correlated ED only with results of MPS, long-term outcome studies are needed to confirm the association between ED and an adverse cardiovascular prognosis. However, our findings do suggest important clinical implications. First, our study identifies patients referred for MPS as a group with a very high prevalence of ED, and thus physician questioning about sexual dysfunction in this population may improve recognition and treatment of this disease. Second, the fact that ED is associated with multiple markers of an adverse cardiovascular prognosis, including low functional capacity, mild and severe coronary heart disease, and left ventricular dysfunction, suggests that sexual function questioning may be an invaluable tool to identify patients for aggressive risk factor modification or treatment. It is important to note that this was a study of patients referred for stress testing; thus, whether similar findings are present in patients without an indication for stress testing is unknown. However, if our results are substantiated in other populations, sexual function questioning may serve as an easily obtainable, noninvasive means to identify an early and potent risk factor for coronary heart disease, and may be useful to incorporate in traditional office-based risk assessment.

CONCLUSIONS

In male patients referred for MPS, the presence of ED is common and is a strong predictor of clinically significant coronary heart disease and established markers of an adverse cardiovascular prognosis as determined by MPS. Erectile dysfunction is a stronger predictor than traditional coronary heart disease risk factors in this population. Sexual function questioning may be useful to stratify risk in patients suspected to have coronary heart disease. Further studies are needed to establish whether patients with ED but no cardiac symptoms should be screened for overt coronary heart disease.

Accepted for Publication: May 30, 2005.
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Financial Disclosure: None.
Funding/Support: This study was supported in part by an unrestricted independent medical grant from Pfizer Pharmaceuticals, New York, NY.

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