

News and Views From the Literature

Hypertension

A New Risk Score

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A Risk Score for Predicting Near-Term Incidence of Hypertension: The Framingham Heart Study

Parikh NI, Pencina MJ, Wang TJ, et al.

Ann Intern Med. 2008;148:102-110.

Recent assessments have estimated the prevalence of hypertension in the United States to be approximately 72 million. Just by virtue of its prevalence, hypertension has a profound effect on the incidence of cardiovascular complications, including heart failure,

stroke, and chronic kidney disease (CKD). Efforts to prevent the development of hypertension by risk factor modification, through approaches such as salt restriction, exercise, and diet, are important. The ability to predict which patients are most likely to develop hypertension in the future should allow these prevention efforts to be targeted to those at highest risk. Parikh and colleagues¹ have developed a risk score to define the 4-year risk of developing hypertension in patients without prevalent hypertension, evidence of cardiovascular disease, serum creatinine above 2.0 mg/dL, or prevalent diabetes. Factors considered in the risk calculation included systolic and diastolic blood pressure, body mass index, smoking history, parental history of hypertension, and sex (Figure 1). The lowest score achievable with this risk assessment scheme is -12, which is associated with a 0.22% risk of developing hypertension within the next 4 years (Figure 2). The highest score achievable is 28, which is associated with a nearly 86% risk of developing hypertension within the next 4 years.

This risk score can be a very useful tool in describing to patients their short-term risk for developing hypertension. This scoring scheme can play an important role in motivating not only the patient but the treating physician to focus efforts on risk factor modification in the higher risk cohorts. ■

Step 1

Systolic Blood Pressure	Points
< 110 mm Hg	-4
110-114 mm Hg	0
115-119 mm Hg	2
120-124 mm Hg	4
125-129 mm Hg	6
130-134 mm Hg	8
135-139 mm Hg	10



Step 2

Sex	Points
Female	1
Male	0



Step 3

Body Mass Index	Points
< 25 kg/m ²	0
25-30 kg/m ²	1
> 30 kg/m ²	3



Step 4

Points for Diastolic Blood Pressure

Age	< 70 mm Hg	70-74 mm Hg	75-79 mm Hg	80-84 mm Hg	85-89 mm Hg
20-29 y	-8	-3	0	3	6
30-39 y	-5	0	2	5	7
40-49 y	-1	3	5	6	8
50-59 y	3	5	7	8	9
60-69 y	6	8	9	10	10
70-79 y	10	11	11	11	11



Step 5

Smoking	Points
No	0
Yes	1



Step 6

Parental Hypertension	Points
None	0
One	1
Both	2

Predicted Risk for Hypertension

Total Points	1-Year Risk (%)	2-Year Risk (%)	4-Year Risk (%)
-12	0.06	0.11	0.22
-11	0.07	0.13	0.27
-10	0.08	0.16	0.31
-9	0.09	0.19	0.37
-8	0.11	0.22	0.44
-7	0.13	0.26	0.52
-6	0.15	0.31	0.62
-5	0.18	0.37	0.73
-4	0.22	0.43	0.86
-3	0.26	0.51	1.02
-2	0.30	0.61	1.21
-1	0.36	0.72	1.43
0	0.43	0.85	1.69
1	0.50	1.01	2.00
2	0.60	1.19	2.37
3	0.71	1.41	2.80
4	0.84	1.67	3.31
5	0.99	1.97	3.90
6	1.17	2.33	4.61
7	1.39	2.75	5.43
8	1.64	3.25	6.40
9	1.94	3.84	7.53
10	2.29	4.53	8.86
11	2.71	5.34	10.40
12	3.20	6.30	12.20
13	3.78	7.41	14.28
14	4.46	8.72	16.68
15	5.26	10.24	19.43
16	6.20	12.01	22.58
17	7.30	14.06	26.14
18	8.58	16.43	30.16
19	10.08	19.15	34.63
20	11.82	22.25	39.55
21	13.85	25.77	44.91
22	16.18	29.74	50.64
23	18.86	34.17	56.66
24	21.93	39.05	62.85
25	25.41	44.36	69.05
26	29.33	50.06	75.06
27	33.71	56.06	80.69
28	38.55	62.24	85.74

Figure 1. Calculation of a score to determine the risk that a patient will develop hypertension in 1, 2, and 4 years. Reproduced with permission of American College of Physicians from Annals of Internal Medicine. Parikh NI et al. A risk score for predicting near-term incidence of hypertension: the Framingham Heart Study. Volume 148 © 2008¹; permission conveyed through Copyright Clearance Center, Inc.

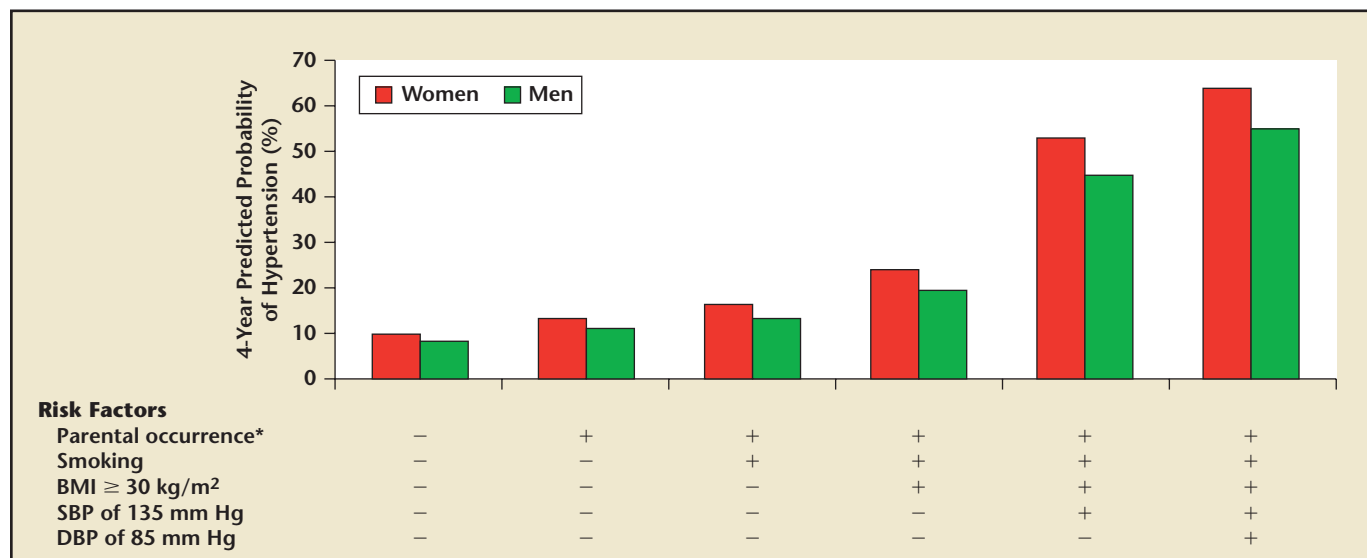


Figure 2. The 4-year predicted likelihood that a patient will develop hypertension. Blood pressure was 120/80 mm Hg, unless otherwise indicated. The plus and minus signs below the graph indicate the presence or absence of risk factors. *Both parents with hypertension. BMI, body mass index; DBP, diastolic blood pressure; SBP, systolic blood pressure. Reproduced with permission of American College of Physicians from *Annals of Internal Medicine*. Parikh NI et al. A risk score for predicting near-term incidence of hypertension: the Framingham Heart Study. Volume 148. Copyright © 2008¹; permission conveyed through Copyright Clearance Center, Inc.

Percutaneous Coronary Intervention

Significance of Troponin Bump in PCI and Safety of Warfarin With Dual Antiplatelet Therapy

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Prognostic Significance of Small Troponin I Rise After a Successful Elective Percutaneous Coronary Intervention of a Native Artery

De Labriolle A, Lemesle G, Bonello L, et al.

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Efforts are underway to establish elevated troponin following percutaneous coronary intervention (PCI) as one of the national quality benchmarks for those who perform these studies. This would mandate routine assessment of troponin in all patients undergoing PCI. There has yet to be established a clear relationship between small troponin elevation in patients undergoing elective PCI and the quality of the PCI, and therefore this assessment has not been validated. A task force including the European Society of Cardiology, American Heart Association, American College of Cardiology Foundation, and World Heart Federation, has developed a “universal” definition of myocardial infarction (MI), including PCI-related MI, to be any increase greater than 3 times the 99th percentile of a normal reference population.²

De Labriolle and colleagues³ evaluated a total of 3200 consecutive patients undergoing successful PCI at their institution between 2003 and 2006. Of these patients, 1402 (43.8%) had an elevation of troponin greater than the 97.5th percentile (mean 0.32 ng/mL, range 0.01-4.94), and 751 patients (23.4%) had a troponin I level greater than 0.30 ng/dL. The investigators used a cutoff troponin level of greater than 0.30 ng/mL to indicate a troponin level representing an MI, as per the above task force recommendation.