**Systemic vascular resistance predicts the development of hypertension: the Cardiovascular Risk in Young Finns Study**

**Online Supplement**

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**Table S1.** Relationship between variables measured in 2007 and hypertension in 2011.

|  |  |
| --- | --- |
|  | **Hypertension in 2011** |
| **Variables measured in 2007** | **OR (95 % CI)** | **P value** |
| Systolic blood pressure | 1.74 (1.32-2.33) | <0.001 |
| SVRI | 1.43 (1.07-1.93) | 0.018 |
| Insulin | 1.37 (1.00-1.91) | 0.061 |
| Age | 1.05 (1.01-1.10) | 0.029 |
|  |  |  |
|  |  |  |

The multivariable model included sex and age, as well as parental history of hypertension, HDL cholesterol, LDL cholesterol, triglycerides, glucose, insulin, body mass index, smoking, C-reactive protein, systolic and diastolic blood pressure, stroke index (SI), and systemic vascular resistance index (SVRI) measured in 2007. Variables with a statistically significant or borderline significant (p<0.09) association with hypertension are reported. Analyses performed on 858 subjects who were normotensive in 2007.

Hypertension was defined as systolic blood pressure ≥ 130 mmHg or diastolic blood pressure ≥ 80 mmHg, self-reported use of antihypertensive medication, or self-reported hypertension diagnosis.

OR: odds ratio per 1 SD increase in predictor variable, except for sex (female/male) and smoking (nonsmoker/smoker) per change in category. CI: confidence interval.

**Table S2.** Relationship between variables measured in 2007 and hypertension in 2011.

|  |  |
| --- | --- |
|  | **Hypertension in 2011** |
| **Variables measured in 2007** | **OR (95 % CI)** | **P value** |
| SVRI | 1.69 (1.27-2.28) | <0.001 |
| Systolic blood pressure | 1.36 (1.03-1.80) | 0.030 |
| Diastolic blood pressure | 1.32 (0.99-1.78) | 0.060 |
| Age | 1.07 (1.02-1.12) | 0.005 |
|  |  |  |

The multivariable model included sex and age, as well as parental history of hypertension, HDL cholesterol, LDL cholesterol, triglycerides, glucose, insulin, body mass index, smoking, C-reactive protein, systolic and diastolic blood pressure, stroke index (SI), and systemic vascular resistance index (SVRI) measured in 2007. Variables with a statistically significant or borderline significant (p<0.09) association with hypertension are reported. Analyses performed on 678 subjects who were normotensive in 2007.

Hypertension was defined as systolic blood pressure ≥ 120 mmHg or diastolic blood pressure ≥ 80 mmHg, self-reported use of antihypertensive medication, or self-reported hypertension diagnosis.

OR: odds ratio per 1 SD increase in predictor variable, except for sex (female/male) and smoking (nonsmoker/smoker) per change in category. CI: confidence interval.

**Table S3.** Comparison of models for the prediction of incident hypertension

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Model** | **AUC** | **95 % CI** | **P value** | **NRI events**  | **P value** | **NRI non-events**  | **P value** | **NRI total**  | **P value** |
| Reference model | 0.750 | 0.703-0.797 | ... | ... | ... | ... | ... | ... | ... |
| Reference model + SVRI + SI | 0.764 | 0.716-0.811 | 0.188 | 18.1 | 0.038 | 19.3 | <0.001 | 37.4 | <0.001 |

Reference model: age, sex, parental history of hypertension, smoking, systolic and diastolic blood pressure, body mass index, LDL cholesterol, HDL cholesterol, triglycerides, glucose, insulin, and C-reactive protein measured in 2007.

Hypertension was defined as systolic blood pressure ≥ 130 mmHg or diastolic blood pressure ≥ 80 mmHg, self-reported use of antihypertensive medication, or self-reported hypertension diagnosis.

SVRI: systemic vascular resistance index. AUC: area under the receiver operating characteristic curve. CI: confidence interval. NRI: continuous net reclassification improvement. Event: incident hypertension.

**Table S4.** Comparison of models for the prediction of incident hypertension

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Model** | **AUC** | **95 % CI** | **P value** | **NRI events**  | **P value** | **NRI non-events**  | **P value** | **NRI total**  | **P value** |
| Reference model | 0.715 | 0.667-0.762 | ... | ... | ... | ... | ... | ... | ... |
| Reference model + SVRI + SI | 0.726 | 0.679-0.773 | 0.191 | 9.8 | 0.257 | 13.9 | 0.002 | 23.7 | 0.015 |

Reference model: age, sex, parental history of hypertension, smoking, systolic and diastolic blood pressure, body mass index, LDL cholesterol, HDL cholesterol, triglycerides, glucose, insulin, and C-reactive protein measured in 2007.

Hypertension was defined as systolic blood pressure ≥ 120 mmHg or diastolic blood pressure ≥ 80 mmHg, self-reported use of antihypertensive medication, or self-reported hypertension diagnosis.

SVRI: systemic vascular resistance index. AUC: area under the receiver operating characteristic curve. CI: confidence interval. NRI: continuous net reclassification improvement. Event: incident hypertension.