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## Mortality rates in hypertensive subjects with peripheral arterial disease: detection of a J-curve phenomenon

### Abstract: P3227

#### Mortality rates in hypertensive subjects with peripheral arterial disease: detection of a J-curve phenomenon

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**On behalf:** ERV study group

**Topic(s):**

Peripheral artery disease - Pathophysiology, epidemiology, diagnosis

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**Background:** Determination of asymptomatic organ damage is important in cardiovascular risk stratification, and has a great impact on the treatment of hypertension. The measurement of the ankle-brachial index (ABI) is an accepted method for the detection of asymptomatic peripheral arterial disease (PAD). Abnormal ABI is accepted as a marker of cardiovascular risk that predicts adverse cardiovascular outcomes.

**Purpose:** The assessment of mortality rates during the follow-up period of the ERV program in hypertensive patients with abnormal ABI (PAD patients).

**Methods:** The Hungarian ERV program is a large-scale, multicenter, observational study with a cross-sectional and a longitudinal part. The first period of the study was conducted from April 2007 to September 2008 in 55 hypertension outpatient clinics in Hungary and the prospective phase was ended in April 2014. In all patients ABI was measured and cardiovascular outcomes were collected in the 5 years follow-up period.

**Results:** In the 21892 enrolled hypertensive patients (50–75 years of age), the prevalence of PAD (ABI  $\leq$ 0.9) was 14.4%. In 9.4% of the subjects high ABI ( $>$ 1.3) was measured. Among these hypertensive subjects the five years cumulative death ratio in both gender was twice as high in PAD patients compared to those without PAD (17.4% vs 7.4% in men,  $p<0.001$ ; 9.8% vs 4.2% in women,  $p<0.001$ ). The cumulative death ratio was significantly higher in patients with high ABI, as well. The relative risk of cumulative death was higher in case of low ABI compared to patients with normal ABI values both in men (RR: 2.32;  $p<0.001$ ) and in women (RR: 2.32;  $p<0.001$ ).

In hypertensive PAD patients mortality increased in both genders in patients with systolic blood pressure below 120 mmHg and above 160 mmHg compared to systolic blood pressure 130–139 mmHg ( $p<0.001$  and  $p<0.01$ ) and in men below diastolic pressure 70 mmHg and above 90 mmHg compared to diastolic blood pressure 80–89 mmHg ( $p<0.001$  and  $p<0.01$ ).

**Conclusion:** Low ABI is a strong predictor of mortality in hypertensive patients. In hypertensive PAD patients, the J-curve shape phenomenon between blood pressure and mortality was firstly described in our analysis. Its existence and the potential causality needs further analysis.