Abstract

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POPULATION-BASED STUDY ON THE PREVALENCE AND RISK FACTORS OF ORTHOSTATIC HYPOTENSION IN SUBJECTS WITH PRE-DIABETES AND DIABETES MELLITUS

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Objective: The aim was to investigate the relationship between pre-diabetes and orthostatic hypotension (OH) and to examine the prevalence and correlates of OH in community-dwellers with normal glucose tolerance (NGT), pre-diabetes, and diabetes mellitus.

Methods: All participants were classified as NGT (n=1069), pre-diabetes (n=412), and diabetes (n=157). OH was defined as a decline in systolic/diastolic blood pressure (BP) of ≥20/10 mmHg when a person changed from a supine to a standing position. Cardiovagal response to standing was the ratio between the longest RR interval around beat 30 and the shortest RR interval around beat 15 after standing (30max/15min).

Results: The prevalence of OH was 13.8%, 17.7%, and 25.5% in subjects with NGT, pre-diabetes, and diabetes. For all subjects, age, diabetes, hypertension, and a decreased 30max/15min, but not pre-diabetes, were independently associated with OH. Age, hypertension, and 30max/15min were the correlates of OH in NGT subjects. Age and hypertension were related to OH in pre-diabetic subjects. HbA1c and hypertension were the determinants of OH in diabetic subjects. Supine BP was related to OH in all subjects and subgroups.

Conclusions: Pre-diabetic subjects don’t have a higher risk of OH than NGT subjects, although the risk of OH is higher in diabetic subjects. Hypertension and supine BP were risk factors of OH in both pre-diabetic and diabetic subjects. Age and Hba1c were the correlates of OH in pre-diabetic and diabetic subjects, respectively. Cardiovagal response to standing is an important determinant of OH in NGT subjects, but not in pre-diabetic and diabetic subjects.