Thesis Title	Orthostatic Hypotension and Cardiovascular Autonomic Function in the Elderly
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Abstract

Orthostatic hypotension is an important problem that is often found in the elderly and can greatly affect their quality of life. Factors associated with orthostatic hypotension are heterogeneous, and many are interrelated. This study proposed to survey the prevalence of orthostatic hypotension among older population in Bangkok and study the factors associated with the condition. In addition, in the elderly with orthostatic hypotension but without known predisposing factors (age-related orthostatic hypotension), as evaluated from medical history, physical examination and laboratory results, cardiovascular autonomic function tests were carried out to rule out autonomic dysfunction.

Orthostatic hypotension, defined as a fall in systolic blood pressure ≥ 20 mmHg or diastolic blood pressure ≥ 10 mmHg on standing from supine position, was found to have a prevalence of 12.6% (42/334, 13 males and 29 females) in community-dwelling elderly (aged 60-96 years, 105 males and 229 females) who lived in Bangkok. Comparison of medical history, physical examination and laboratory test results in subjects with and without orthostatic hypotension (n = 42 and 292, respectively), using Student's unpaired t-test and chi-square test, showed that the former had higher age, erythrocyte

sedimentation rate (ESR), fasting blood sugar (FBS), blood urea nitrogen (BUN), creatinine, lying systolic and diastolic blood pressure, and lower hematocrit. There were also higher percentages of diabetes mellitus, or subjects who took antihyperglycemic drug, hypertension, carotid bruit, absent ankle jerk and anemia in orthostatic hypotension group. Logistic regression analysis showed that creatinine, fasting blood sugar, absent ankle jerk, lying systolic blood pressure, anemia and lying diastolic blood pressure were independent factors associated with orthostatic hypotension (R^2 = 28.57%). This suggests that the underlying conditions important to orthostatic hypotension in ambulatory elderly may include a decline in renal function, diabetes mellitus, peripheral neuropathy, anemia, low lying systolic blood pressure and high lying diastolic blood pressures.

Comparison of subjects with and without orthostatic symptoms during the examination (n = 82 and 201, respectively) showed that the former had lower age, red blood cell count, albumin and sodium, and had higher percentages of subject with heart disease, night blindness, incontinence and positive Romberg sign. The lack of association between orthostatic symptom and orthostatic hypotension, together with the discrepency in the factors important to these two conditions, suggests that orthostatic hypotension and symptom may have different pathogenesis.

Ten subjects could be classified as having age-related orthostatic hypotension. Comparison of cardiovascular autonomic function tests between 6 in this group and 27 controls yielded similar results in both groups (Mann-Whitney U test). Therefore autonomic dysfunction may not be a contributing factor in age-related orthostatic hypotension. More subjects with age-related orthostatic hypotension are needed for more conclusive data on factors related to this condition.