INCIDENCE OF CORONARY ARTERY DISEASE AND STROKE IN RELATION TO THE PHYSICAL COURSE OF RESISTANT HYPERTENSION: A TIME UPDATED ANALYSIS OF A 4 YEAR COHORT STUDY

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Background: Data for the prognosis of resistant hypertension (RH) arising from studies with estimation of RH status at baseline. The cardiovascular prognosis regarding the physical course of RH remains unclear. We aimed to identify the associated cardiovascular risk of different patterns of RH physical course.

Methods: In a prospective observational study, 1911 treated hypertensive patients (aged 59±11 years, 49% males) were followed for a mean period of 3.9±1.7 years. Four groups were created depending on presence or absence of RH at baseline and follow-up: never having RH, resolved RH, incident RH and persistent RH. Endpoint of interest was the composite of coronary artery disease and stroke. For the subjects with differential RH status at baseline and follow up a uniform distribution was assumed for the estimation of the time point of status change. A time updated Cox regression analysis was then applied to estimate hazards of the predefined outcome.

Results: The distribution between groups was as following: 1,153 patients (60%) never having RH, 189 (10%) with resolved RH, 204 (11%) with incident RH and 365 (19%) with persistent RH. During follow-up, 65 events occurred (9.7 cases per 1,000 person-years). Incidence rates of cardiovascular events were 6.4 cases per 1,000 person-years in the never having RH group, 9.1 cases per 1,000 person-years in the resolved RH group, 13.2 cases per 1,000 person-years in the incident RH group and 18.1 cases per 1,000 person-years in the persistent RH group. Unadjusted analysis showed that patients with persistent RH exhibited a significantly higher risk by 2.44 times (CI: 1.4 - 4.25, p= 0.002) for the composite cardiovascular outcome compared with the never having RH group, while there was also a higher risk in patients with incident RH (HR: 2.56 CI: 1.21-5.41, p=0.009). Of note, after adjusting for major cardiovascular risk factors persistent RH remained independent predictor of the outcome (HR: 2.01 CI: 1.17-3.77, p=0.013).

Conclusion: In treated hypertensive patients persistence of RH during follow up is associated with adverse cardiovascular prognosis.