Myocardial Perfuion Imaging Results Stratifie for Adverse Outcomes in Patients Treated with Alpha Blockers for Hypertension - A Retrospective Analysis of 19,508 Patients

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Background:
The role of alpha-blockers (AB) in the management of hypertension is controversial because of recent concerns regarding excess of adverse cardiac events. Therefore, our aim was to evaluate the effect of AB on the outcomes of hypertensive patients who underwent myocardial perfusion imaging (MPI) taking in account the indication for AB treatment and the MPI results.

Methods:
A retrospective analysis of the nuclear cardiology laboratory database was performed. Only hypertensive patients were included (19,508). Baseline characteristics, medications, MPI data, cardiac events, and mortality data were extracted. The cohort was further divided into three groups: Subjects who were not treated with AB - the reference group (17,053), AB for BPH (1,164), and AB for HTN (1,258). Patient outcomes (cardiovascular mortality and MI) were adjusted for differences in clinical and demographic characteristics as well as for the myocardial perfusion study results (none or mild, moderate and severe reversible perfusion defect (PD) by Cox proportional regression models.

Results:
The mean age was 65±11.1, male gender rate was 55.2%, an average follow-up was 79.19±37.34 months. The table below shows the hazard ratios for adverse cardiac outcomes by extent of the reversibility of the PD and the indication for AB.

	AB (-)	AB for BPH	AB for HTN
None or mild PD	1	0.96(0.73-1.26)	0.96(0.73-1.26)
Moderate PD	1	0.97(0.67-1.41)	1.34(0.99-1.83)
Severe PD	1	0.89(0.53-1.50)	**1.68(1.07-2.63)**

Additional variables that were associated with increased HR were age, sex, number of antihypertensive drugs, CHF p/h and smoking.

Conclusion:
Our data show the AB therapy is associated with adverse cardiac outcomes only in patients treated with AB for HTN who had severe reversible PD. In all other groups AB appears to be safe. These results further emphasize the usefulness of MPI for risk stratification in the era personalized medicine.