



# EFFECTIVENESS OF BETA-BLOCKERS AND ACE INHIBITORS IN PATIENTS WITH NONOBSTRUCTIVE HYPERTROPHIC CARDIOMYOPATHY AND ARTERIAL HYPERTENSION



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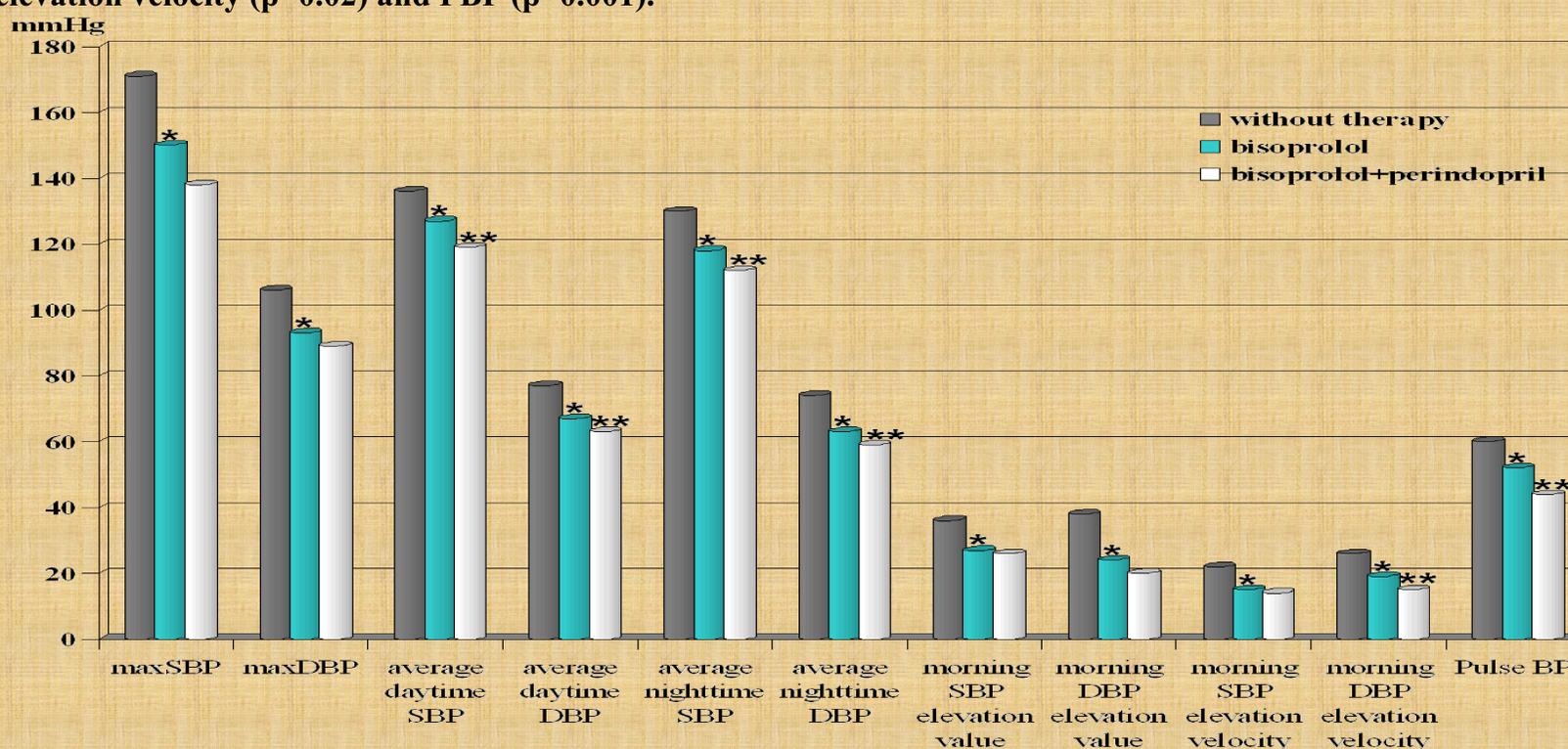
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There are few studies focused on arterial hypertension (AH) treatment in patients with hypertrophic cardiomyopathy (HCM).

**Purpose:** to assess the effect of beta-blockers (BB) and ACE inhibitors on blood pressure (BP) profile and arterial stiffness in patients with HCM and AH

**Design and method:** We examined 16 patients with nonobstructive HCM and 1-3 AH degree (12 women (75%), average age 55.9±14.9 years) using 24-h BP monitoring (ambulatory BP monitor «BPLab», Russia) with arterial stiffness and central BP assessment (BPLab Vasotens software) before and after 1 month of BB bisoprolol administration (dose 5.4±2.6 mg). To achieve a target BP level ACE inhibitor perindopril (dose 2.6±1.3 mg) was added with assessment of its effectiveness after 6 months of combined therapy.

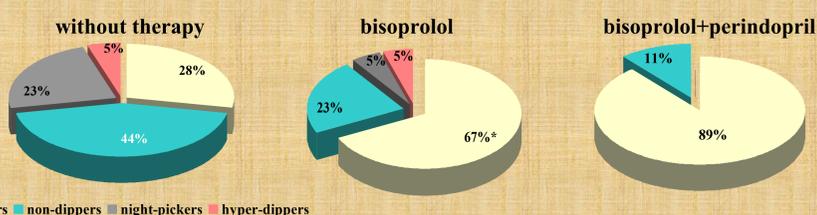
**Results:** After 1 month of bisoprolol treatment 24-h BP monitoring showed significant decrease of maximum systolic (SBP) and diastolic (DBP) BP (p=0.002 and 0.02), average daytime SBP and DBP (p=0.0004 and 0.002), average nighttime SBP and DBP (p=0.003 and 0.001), morning SBP and DBP elevation value (p=0.0004, p=0.001), morning SBP and DBP elevation velocity (p=0.001 and 0.003) and pulse BP (PBP) (p=0.02). 6 months of combined therapy with perindopril resulted in further significant decrease of average daytime SBP and DBP (p=0.006 and 0.004), average nighttime SBP and DBP (p=0.02 and 0.04), morning DBP elevation velocity (p=0.02) and PBP (p=0.001).



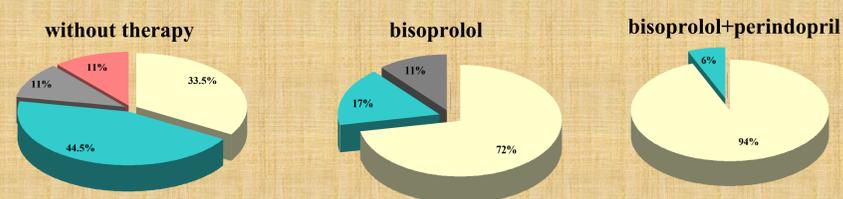
\*p<0.05 for comparison without therapy and bisoprolol  
\*\*p<0.05 for comparison bisoprolol and bisoprolol+perindopril

Day-night BP index showed significant SBP and DBP «dippers» increase after 6 months of combined therapy (p=0.002 and 0.02) with «non-dippers» decrease (p=0.04) and disappearance of «night-pickers» and «hyper-dippers».

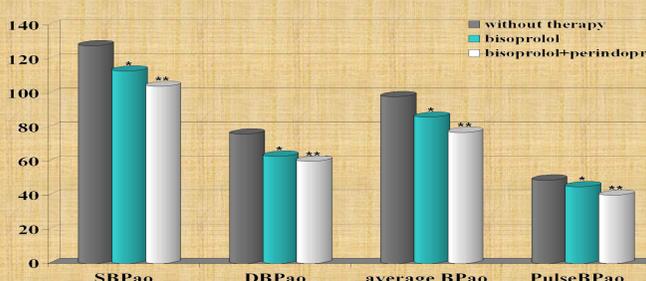
SBP day-night index



DBP day-night index



Central aortic BP parameters showed significant decrease on bisoprolol and further decrease on combined therapy: SBPao (p=0.001 and 0.002, accordingly) DBP (p=0.001 and 0.03), average BPao (p=0.001 and 0.001), pulseBPao (p=0.01 and 0.04). Arterial stiffness index (ASI) decreased on therapy with bisoprolol with further reduction on combined therapy. Aortic pulse wave velocity (PWVao) showed reduction on bisoprolol therapy without significant change after perindopril administration.



Parameters	without therapy (I)	bisoprolol (II)	p-level (I-II)	Bisoprolol perindopril (III)	p-level (II-III)	p-level (I-III)
Heart Rate	66.2±9.8	61.8±9.6	0.04*	60.1±9.8	0.16	0.06
Reflected Wave Transit Time (RWTT), ms	152.0±15.5	145.9±14.4	0.08	143.3±10.9	0.21	0.06
ASI, mmHg	163.8±37.5	143.1±42.5	0.001*	122.9±43.7	0.001*	0.0004*
Ambulatory ASI (AASI)	0.46±0.26	0.37±0.19	0.09	0.36±0.16	0.31	0.07
PWVao, m/s	9.23±1.8	8.4±1.4	0.004*	8.3±1.1	0.33	0.002*
Augmentation index (Aix), %	-23.2±27.0	-22.8±20.0	0.5	-24.6±18.7	0.73	0.73

**Conclusions:** Therapy with bisoprolol in patients with HCM and AH resulted in significant decrease of 24-h BP monitoring parameters, parameters of arterial stiffness and central BP. Combined therapy with perindopril resulted in achievement of target BP level with day-night BP index normalization, further central BP and arterial stiffness reduction.