Objective

(1) Evaluate the parameters of circadian variability of blood pressure (BP) in untreated patients aged 45–65 years with 1–2 grade, II stage arterial hypertension (AH) comparing with healthy individuals of comparable age and gender; (2) compare the influence of fixed combination (FC) of amlodipine/lisinopril (FC A/L) and FC bisoprolol/hydrochlorothiazide (FC B/H) on circadian variability of BP in these patients.

Materials and methods

At the first stage of this study we observed 44 healthy individuals (21 males, 23 females, average age 51.5±1.0 years) and 60 untreated patients with AH 1–2 grade, II stage (31 males, 29 females, average age 53.6±0.8 years). At the second stage of this study we randomized the patients with AH into two subgroups. The patients of the first subgroup (average age 52.7±1.1 years) received FC A/L starting from 5mg/10mg per day, and the patients of the second subgroup (average age 54.6±1.0 years) received FC B/H starting from 2.5mg/6.25 mg per day. FC dose was adjusted every 14 days until the target levels of BP below 140/90 mm Hg had been reached, after it patients continued to receive these doses of drugs for 12 weeks.

Results

Patients with AH had significantly higher (p<0.001) variability of systolic BP (SBP) and diastolic BP (DBP) at night (12.1±0.4 and 9.8±0.4 mm Hg, respectively) comparing with the control group (9.3±0.4 и 6.9±0.3 mm Hg, respectively). FC therapy led to significant reduction of office SBP, DBP, pulse BP (PBP), average daytime SBP, DBP, and PBP, average nighttime SBP and DBP. Both drug combinations resulted in significantly (p<0.05) reduced daytime SBP variability, and FC A/L had significantly more evident effects comparing with FC B/H (–2.7±0.7, –0.9±0.3 mm Hg, respectively). FC A/L subgroup was characterized with significant reduction of SBP variability (p<0.05) at night and DBP variability at daytime and night (–1.2±0.5, –0.7±0.3, –1.4±0.6 mm Hg, respectively).

Conclusions

Untreated patients aged 45–65 years with 1–2 grade, II stage AH have higher variability of SBP and DBP at night comparing with healthy individuals of comparable age and gender. 12 week therapy with FC A/L has more evident antihypertensive effects and reduces circadian BP variability better comparing with FC B/H) in these patients.

Key words

Arterial hypertension, circadian variability of blood pressure, 24h blood pressure monitoring, amlodipine, lisinopril, bisoprolol, hydrochorothiazide, fixed combination