abnormalities in heart function leading to kidney injury or dysfunction. Acute reno-cardiac syndrome (type 3); acute worsening of kidney function leading to heart injury and/or dysfunction. Chronic reno-cardiac syndrome (type 4); chronic kidney disease leading to heart injury, disease and/or dysfunction. Secondary cardio-renal syndrome (type 5); systemic conditions leading to simultaneous injury and/ or dysfunction of heart and kidney. Our goal was to identify the characteristics of patients with cardiorenal syndrome admitted to our department.

Patients and methods: We analyzed retrospectively history, clinical, anthropometric, biochemical and treatment characteristics of patients admitted to our department (from January to December 2010) and diagnosed with cardiorenal syndrome according to ADQI definition. We calculated estimated glomerular filtration (eGFR) by Cockroft-Gault formula and MDRD formula (Modification of Diet in Renal Disease, variation GFRMDRD186).

Results: Out of all admitted patients, 124 were diagnosed with cardiorenal syndrome. 65 (52.4%) were males, mean age of the patients was 74.2 years, mean length of their hospitalization was 7.9 days, 119 had arterial hypertension, 121 had ischemic heart disease, 75 had diabetes mellitus. Mean left ventricular ejection fraction was 40.23%. Cardiorenal syndrome type 1 had only 3 patients, type 2 had 25 (20%) patients, type 4 had 11 patients and type 5 had 85 (68.5%) patients. There were no patients with cardiorenal syndrome type 3. The most prescribed medication was furosemide (65.3%), 56 (45.1%) patients were treated with the inhibitors of renin angiotensin system. Only 2 patients were treated with hemodialysis and only in 5 cases dobutamine was used.

Conclusions: Cardiorenal syndrome was frequent among older patients admitted to our department. The most common was type 5 (68.5%), and the most common reason for hospitalisation was chronic heart failure (48%).

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Treatment and control of hypertension in a randomly selected population sample of the Czech Republic over the past 10 years

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Hypertension is the most prevalent cardiovascular disease in the population and a major risk factor for a variety of serious conditions while contributing substantially to cardiovascular mortality.

The study was designed to determine changes in the treatment and control of hypertension in a randomly selected population sample of the Czech Republic over the past 10 years.

Method: Three different 1% random population samples aged 25–64 years were examined in 1997/1998, 2000/2001, and 2006/2009 in nine districts of the Czech Republic (total number of individuals 3,209, 3,325, and 3,612, respectively). The paper reports results of analysis of data obtained from 512, 623, and 883 drug-treated hypertensives, respectively.

Results: Prevalence of hypertension increased over the past decade (33.4% vs. 36.6% vs. 40.5%; p < 0.001) as did the number of drug-treated hypertensive individuals (47.8% vs. 51.3% vs. 60.4%; p < 0.001). Well-controlled hypertension (BP < 140/90 mmHg) was achieved in 19% vs. 20.3% vs. 31.1% (p < 0.001) hypertensives; the respective figures for drug-treated hypertensives were 39.8% vs. 39.6% vs. 51.4% (p < 0.001). There was an increase in the average number of antihypertensive drugs used by males (1.55 ± 0.70 vs. 1.86 ± 0.92 vs. 2.01 ± 1.02; p < 0.001).

Conclusion: The prevalence of hypertension rose in a random population sample of the Czech Republic over the past 10 years while treatment and control of hypertension improved.

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Repeatedly negative outcome of blood cultures in a patient with atypical and complicated progress of infective endokarditis

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Case report: We are describing a case of a 44-year-old patient suffering from a coronary heart disease (anterior ST-segment elevation myocardial infarction in December 2009 dealt with PCI RIA at our department, reinfarction in the basin of RIA in September 2010 designed conservatively) and severe aortic regurgitation, who was repeatedly hospitalized at the Department of Infectious Diseases because of fevers with transesophageal echocardiagraphy findings of extensive morphological inflammatory affection of mitral and aortic valve.

Imaging methods showed large arterial embolization – stroke with sinistral hemiplegia, splenectic embolizations and arterial embolization in the kidneys. Despite

repeated collection of blood cultures (most of them collected in periods when antibiotic treatment was not carried out) etiological agents unproven. In November 2010 a mechanical heart valve was implanted in aortic position and mitral valve repair was carried out. The pathogen Bartonella Quintana was found by PCR method in the valve tissue (subsequently confirmed serologically) as the source of infective endocarditis.

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Detection of perfusion abnormalities on coronary angiograms in hypertension by myocardium selective densitometric perfusion assessment

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Introduction: Structural and functional vascular alterations could be observed in arterial hypertension. Several sophisticated methods are available to assess reserve capacity of coronary circulation and myocardial perfusion including videodensitometric analysis on coronary angiograms. The present study was aimed to evaluate regional myocardial perfusion abnormalities by a novel computerized videodensitometric method in patients with arterial hypertension and negative coronary angiograms.

Methods: The study comprised 31 non-diabetic patients (60.0 ± 10.5 years, 19 males) with hypertension and normal epicardial coronary arteries (<50% intraluminal diameter stenosis). Their results were compared to 18 age-, gender- and risk factor matched controls without significant coronary artery disease. Typical angina and positive stress result indicated coronary angiography in all cases. The computerized method for myocardial perfusion assessment was performed on the base of the analysis of time-density curves (TDC) measured over the myocardial region of interest (ROI) on coronary angiograms. Polygonal shaped ROIs were selected by an experienced interventional cardiologist and covered the whole myocardial area supplied by the investigated vessel. The maximal density of TDC (G_{max}) and the time to reach maximal density (T_{max}) were measured on the filtered curve. Gmax/ Tmax of the TDCs in left anterior descending- (LAD), left circumflex (CX)- and right coronary (RC)-related myocardial regions on X-ray coronary angiograms were used as quantitative myocardial perfusion parameters. Arteries were marked out from regions of assessment improving sensitivity of measurements.

Results: Reduction in Gmax/Tmax values were found in hypertensive patients as compared to normotensive subjects with normal epicardial coronary artery in LAD- (2.62 ± 1.56 vs. 3.81 ± 2.09, p <0.05) and CX-related (2.62 ± 1.47 vs. 3.21 ± 2.21, p <0.05) coronary artery territories.

Conclusions: Reduced Gmax/Tmax values of the TDC assessed on coronary angiograms by a recently developed computerized videodensitometric method could be measured suggesting myocardial perfusion abnormalities in hypertensive patients compared to normotensive subjects with normal epicardial coronary arteries.

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Arrhythmias in Eisenmenger syndrome – anatomic and hemodynamic correlations

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Background: Eisenmenger syndrome (ES), as the most severe form of irreversible pulmonary arterial hypertension (PAH) due to congenital heart defects, results in many specific anatomic and hemodynamic conditions that represent a potentially arrhythmogenic substrate. On the other hand, developing even otherwise benign arrhythmia may break a very fragile hemodynamic balance of ES patients (pts) and may lead to their rapid clinical deterioration.

Patients and methods: Analyzed were 35pts, (26F/9M, mean age 45±16.5y) with ES: 22pts, (62.9%) with simple shunts, 6pts, (17.1%) with multiple shunts and 7pts, (20%) with complex heart defects. Echocardiographically were measured: right ventricular (RV) size and systolic function, RV anterior free wall diastolic diameter (RVAWd), right and left atrial area (RAA, LAA). Analyzed was the presence and type of arrhythmias during follow-up and there clinical impact. Correlations to potential arrhythmogenic substrates and conditions were analyzed.

Results: Arrhythmias were found in 19pts, (55.9%): supraventricular arrhythmias (SV ARY) – atrial fibrillation (AFi) in 9pts, (25.7%); supraventricular extrasystoles (SVES) in 7pts, (20%), supraventricular tachycardia (SVT) in 4pts, (11.4%) and ventricular extrasystoles (VES) in 8pts, (22.9%). SV ARY were more often present in older pts, (age > 50y) – 83.3% vs 39.1% (p=0.01), most frequently AFi – 55.3% vs 8.7% (P=0.0014). On the other hand in younger pts, (age ≤ 50y) VES were found – 56% vs 16.1% (P=0.02). SV ARY, especially AFi could be correlated to more severe atrial dilatation: RAA 18.7cm² vs 27cm² (P=0.004), and also LAA 15.4cm² vs 19.1cm² (P=0.005). VES were correlated to more severe RV hypertrophy: