associated with ACS risk. 81.3% of patients in ACS group and 69.6% patients in NoCAD group had serum cholesterol <200mg/dl. Similarly, 76.9% patients in ACS group and 68.6% patients in NoCAD group had HDL-C <35mg/dl.

Current smoking is the strongest ACS risk factor among South Indians, followed by family history of CAD and diabetes. Hypertension, serum cholesterol <200mg/dl, triglyceride >150mg/dl or LDL-C >100mg/dl were weakly related to ACS risk, and apparently there is not any protective role for high HDL-C among Indians.

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Dynamics of risk factor prevalence in Ryazan region population (for observation)
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Aim: To assess 5-year prevalence of certain risk factors (RF) in men and women of Ryazan region.

Methods: In 2002 as a part of Russian epidemiological “EPOCH” study, a representative sample of Ryazan region population was evaluated (2098 subjects, mean age 44.8±18.6 years). Sample generation was made in three steps: consecutive selection of medical institutions, GP districts and wards was made. With a response rate of 83.9% 1760 people were assessed in 2007, 200 died, 223 migrated, 13 withdrawn consent. Dynamics of risk factors prevalence was analysed: hypertension (HT), smoking, alcohol abuse, salt abuse, obesity, low physical activity, diabetes mellitus.

Results: HT prevalence did not change over 5 years (36.6±1.1% vs. 39.3±1.2%), in women HT prevalence was higher in both 2002 (38.2% vs. 33.9%, p=0.05) and 2007 (42.1% vs. 34.8%, p<0.001). Smoking prevalence did not significantly change over 5 years (25.1% vs. 23.9%). Maximum smoking prevalence was found in the 30-39 years age group (62.1% of men and 13.8% of women). During 5 years the number of alcohol abusers decreased by 3.1% and amounted to 12.4% in men and 0.6% in women, which is less than in 2002 (15.8% and 1.6%). Prevalence of salt abuse after five years remained the same in both men (45.0% vs. 46.3% in 2002, p=0.62) and women (30.1% vs. 34.7% in 2002, p=0.27). There was a significant increase in number of obese subjects – from 18.8% to 22.6%, p<0.001. Obesity was more typical for women (28.3% vs. 14.0%, p<0.001), whereas obesity prevalence increased over 5 years in both women (4.7% vs. 0.001) and men (by 2.3%, p<0.068). Over the observation period, portion of subjects with low physical activity increased by 8.6%, p<0.001 (by 14% in men, p<0.001, and by 1.4% in women, p=0.48). Prevalence of diabetes didn’t change (4.5% vs. 3.4% in 2002), both in men (3.2% vs. 2.4% in 2002), and in women (4.8% vs. 3.9% in 2002). As five years ago, most of the respondents in the assessed sample have a combination of several risk factors. The number of subjects with two factors increased from 28.4% to 32.2%, p<0.001, with three factors – from 15.6% to 21.3%, p<0.001. The number of subjects with more than 3 risk factors remained the same, and with no or only one factor decreased from 16.0% to 11.8%, p<0.001 and from 29.4% to 24.4%, p=0.097, respectively.

Conclusion: A high prevalence of cardiovascular risk factors was revealed in the population of Ryazan region. Over a period from 2002 to 2007 there was a significant increase in number of subjects with obesity (from 18.8% to 22.6%, p<0.001).

CARdiovascular RISK INSIGHTS

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Serial assessment of arterial stiffness by carotid-ankle vascular index for prediction of future cardiovascular events in patients with coronary artery disease
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Purpose: Arterial stiffness is a significant predictor of cardiovascular disease (CVD), which is modified by medications for atherosclerotic risk factors and lifestyle changes. Carotid-ankle vascular index (CAVI) provides noninvasive, objective, and independent measure of blood pressure. This study aimed to investigate changes in CAVI after management of atherosclerotic risk factors and their impact on future CVD outcome in patients with coronary artery disease (CAD).

Methods: The study consisted of 211 CAD patients (65±10 years, 118 men) with impaired CAVI. CAVI examination was repeated 6 months later. Impaired CAVI was defined as – the mean plus 1 SD of the age- and gender-specific normal CAVI values, according to the results in 5,188 healthy subjects. All patients were followed for more than 1 year or until the occurrence of CVD event.

Results: Of the 211 patients, CAVI improved 6 months later in 106 (50%) patients, but remained high in 105 (50%) patients. During follow-up (2.9±1.0 years), CVD events occurred in 28 (13%) patients. Persistently impaired CAVI was an independent predictor of future CVD events (p=0.003), independent of baseline CAVI. The CVD outcome was worse in patients with persistently impaired CAVI than in those with improved CAVI (p<0.001) (Figure). Patients with normalized CAVI after treatment (n=22) had only 1 CVD event.

Conclusions: This study demonstrated for the first time that persistent impairment of arterial stiffness was an independent risk factor of future CVD events. Serial measurement of CAVI provides important prognostic information on patients with CAD in clinical practice.

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A panel of biomarkers related to multiple disorders predicts the recurrence of adverse events in patients with chronic coronary artery disease
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Purpose: There are not prognostic biomarkers or clinical risk scores unanimously accepted for use in chronic Coronary Artery Disease (CAD). As patients with CAD may be affected by other disorders, such as cancer or renal disease, the search for novel prognostic biomarkers should include molecules related also to these disorders. In this study, we have assessed the prognostic value of a panel of plasma biomarkers related to atherothrombosis, renal disease and cancer in patients with chronic CAD.

Methods: We have followed 706 patients with chronic CAD up to 4.6 years. Clinical data were recorded at baseline and plasma was stored at -80°C. We assessed galectin-3, Monocyte Chemoattractant Protein-1 (MCP-1), soluble tumor necrosis factor-like weak inducer of apoptosis, neutrophil gelatinase-associated lipocalin, N-Termal fragment of Brain Natriuretic Peptide (NT-pro-BNP), high-sensitivity troponin, and high-sensitivity C-reactive protein plasma levels. The primary outcome included death, heart failure and acute thrombotic events (ST-elevation myocardial infarction, non-ST-elevation acute coronary syndrome, stroke or transient ischemic attack); the secondary outcome was recurrence of thrombotic events. Cox proportional hazards risk model was used for the analysis.

Results: Age: 61.5±12.3 years, 75% were men, 18% had an ejection fraction<40%, and glomerular filtration rate was 77.6 (63.5, 89.9) mL/min/1.73 m². All patients had a history of previous acute coronary syndrome. Mean follow-up was 2.2±0.9 years. Fifty-three patients developed the secondary outcome. Increasing MCP-1 plasma levels (p=0.002), hypertenion, age and body mass index predicted this outcome independently. Seventy-eight patients developed the primary outcome. Galectin-3 (p=0.025), MCP-1 (p=0.022), NT-pro-BNP plasma levels (p=0.020), hypertenion, age, therapy with proton-pump inhibitors or nitrates, and lack of statin therapy predicted this outcome independently. When a previously published clinical risk scale was applied to our population, it yielded an area under the receiver operating characteristic (ROC) curve of 0.642 (0.579-0.705; p<0.001). A combined score was developed by adding the deciles of galectin-3, MCP-1, and NT-pro-BNP to this clinical risk scale. Using the combined score (range -1 to +5) increased the area under the curve to 0.744 (0.684-0.805; p<0.001). A combined score of less than 21.5 was associated with a better prognosis (sensitivity=74%, specificity=86%; p<0.001, log rank test).

Conclusions: Galectin-3, MCP-1 and NT-pro-BNP plasma levels improve our ability to predict the evolution of patients with chronic CAD.

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Renal function is one of the determinant factors of subclinical coronary calcification. An intravascular ultrasound virtual histology study
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Background: Chronic kidney disease is considered one of the most important cardiovascular risks and the relation between coronary calcium and renal function has been reported. However, its relation in non-culprit lesion is not fully elucidated.

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