O18 - Comunicación Oral/Oral communication

Enfermedades cardiovasculares II

Cardiovascular diseases II

Viernes 3 de Octubre / Friday 3, October
9:00:00 a/to 11:00:00

Moderador/Chairperson:
Hans Werner Hense y Mª José Tormo

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PATTERNS OF DIFFERENTIAL HYPERTENSION CONTROL IN THE COMMUNITY - THE MONICA AUGSBURG PROJECT

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Introduction: In recent years, importance has been attached to the distinction of systolic (SBP) and diastolic (DBP) blood pressure control among hypertensives. This study aims to identify patterns and correlates of differential blood pressure control in the community.
Methods: We used data from three pooled survey samples of the the MONICA-Augsburg project 1984-95. Overall, 6910 men and 6908 women aged 25-74 years participated in the study. Hypertension was defined as SBP/DBP >=140/90 mmHg or receiving antihypertensive drug therapy at the time of the survey. We determined the age- and gender-stratified prevalence of three subtypes of hypertension based on the presence of isolated SBP (SBP >=140 and DBP <90 mmHg), isolated DBP (SBP <140 and DBP >=90 mmHg) elevation, or both. We assessed the proportion of control according to SPB (<140 mmHg) and DBP (<90 mmHg) among treated hypertensives and identified factors related to poor SBP and DBP control using multivariate analysis.
Results: Among untreated hypertensives (N=3631), mean SBP increased with age in men and women, while DBP decreased with age in both. In hypertensives aged 25-44 years, isolated SBP, isolated DBP, and joint SBP/DBP elevations contributed in similar proportions to the total number of untreated hypertensives. In contrast, in older hypertensives (age 65-74 years) isolated SBP constituted about two thirds of the total number of untreated hypertensives. Among treated hypertensives (N=1700), 36% were controlled to SBP, 67% to DBP and only 32% to both, respectively. Age was the only factor significantly associated with poor SBP control in the multivariate analysis: poor SBP control was twice as common in the 45-64 years age group (OR 1.9; 95% CI 1.3-2.9) and three times in the 65-74 years age group (OR 2.8; 1.8-4.3), as compared to the younger age group. On the other hand, poor DBP control was less common in older age (OR 0.3; 0.2-0.5) and in diabetic patients (OR 0.5; 0.3-0.7).
Conclusions: This study reveals a clear age-related pattern of hypertension control. Isolated systolic hypertension is predominating in older age. Poor SBP control increases with age and constitutes most of poor overall hypertension control. SBP control continues to be far more difficult to achieve than DBP control, putting older hypertensives at particular risk. There is evidence from epidemiological and clinical studies that DBP < 90 mmHg is achievable in 70-90%, whereas only 30-50% of hypertensives attain a SBP < 140 mmHg. Achievement of systolic BP < 140 mmHg is a medically reasonable and defendable goal but might be unrealistic in older age.

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DISEASE-RELATED COSTS IN PATIENTS WITH HYPERCHOLESTEROLEMIA

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Introduction: Hypercholesterolemia (HC) is a major risk factor for cardiovascular diseases. In a cost-of-illness analysis we aimed to assess direct and indirect costs of patients withHC.
Methods: The present analysis is part of the ongoing ORBITAL study, a randomised controlled trial evaluating the long-term cost-effectiveness of a compliance enhancing programme in 8000 patients with HC requiring statin therapy according to Joint European Guidelines. At baseline patients were asked retrospectively about their medical resource use and employment status in the six months preceding enrolment. Direct cost data (including for the present analysis costs for ambulatory, hospital, rehabilitative and nursing care, physiotherapy and transportation) were calculated by multiplying medical resource units used with cost factors per unit. Indirect cost data (productivity loss) were calculated by multiplying days off work due to illness or disease-related early retirement with the average cost factor per day (societal perspective).
Results: Among a total of 2500 patients (mean age 61 ± 11 years, 44% female) included in the present analysis, 32% were employed at the time of inclusion, 19% had a history of myocardial infarction, 8% a history of stroke, 61% had hypertension and 28% diabetes. Disease-related direct costs amounted to a mean of 655 Euros ± 2293 per patient in the six months period, indirect costs to a mean of 1495 Euros ± 4124 per patient. Direct costs included mainly costs for hospital stays (433 Euros ± 2098), primary care consultations (111 Euros ± 118), outpatient therapeutic measures (54 Euros ± 200), and rehabilitation (43 Euros ± 367). Indirect costs due to days off work amounted to 303 Euros ± 1485, due to early retirement to 1191 Euros ± 3940. Of all patients, 11% (n=287) reported days off work (median 14 days) and 9% (n=214) reported disease-related early retirement.
Conclusions: Indirect costs due to a loss of productivity contributed markedly to the disease-related costs in patients with HC. The considerable economic burden of HC indicates the need to assess long-term effectiveness of health care programmes in patients with the disorder.

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HIGH SENSITIVITY C-REACTIVE PROTEIN AND THE FEATURES OF THE METABOLIC SYNDROME

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Introduction: The metabolic syndrome components, including central obesity, high blood pressure and glucose resistance, are major cardiovascular risk factors and have recently been associated with elevated levels of the acute phase reactant, C-reactive protein (CRP). We aimed to evaluate the association between the levels of CRP and the features of the metabolic syndrome in an urban sample of community dwellers.
Methods: We evaluated 498 adult subjects (306 women and 192 men), 18-92 years, recruited after random sampling of Porto in-habitants. All participants completed a structured questionnaire comprising information on social, demographic, behavioural and clinical aspects. Anthropometrics and blood pressure were recorded and a fasting blood sample collected. Metabolic syndrome was defined according to the Third Report of the Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults, as the presence of 3 or more of the following characteristics: waist circumference greater than 102 cm in men and 88 cm in women, triglycerides levels ≥150mg/dL, high density lipoprotein cholesterol (HDL) ≤ 40 mg/dL in men and ≤ 50mg/dL in women, blood pressure ≥130/85 mm Hg and serum glucose ≥110mg/dL. High-sensitivity CRP was assessed by nephelometry. Means were compared after log transformation using ANOVA.
Results: Median CRP levels were significantly higher ($p<0.05$) in the presence of central obesity (2.8mg/L vs. 1.2mg/L), high blood pressure (1.9mg/L vs. 1.0mg/L) and hypertriglyceridemia (2.0mg/L vs. 1.4mg/L). In the presence of metabolic syndrome higher median levels of CRP (2.7 mg/L vs. 1.4 mg/L, $p<0.001$) were also observed. We also found a significant increasing trend ($p<0.001$) in median levels of CRP with increasing number of components of the metabolic syndrome.
Conclusions: The present data supports the hypothesized role of inflammation in the development of several features of the metabolic syndrome, namely obesity and hypertension. Moreover it also seems that increasing severity of metabolic syndrome is associated with increasing inflammation. The metabolic syndrome seems to be associated with a systemic inflammatory response, which may represent an additional pathway for coronary heart disease in these subjects.

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DETERMINANTS OF B-TYPE NATRIURETIC PEPTIDE VARIABILITY IN THE POPULATION

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Introduction: There is wide overlap of B-type natriuretic peptide (BNP) plasma levels between people with and without heart failure (HF) and/or left ventricular systolic dysfunction (LVSD). Thus performance of BNP for detection of LVSD at the community level is suboptimal. The aim of this study was to identify determinants of plasma BNP levels at the populational level.
Methods: In a cross-sectional study, we evaluated 559 participants selected from the community-dwellers of Porto aged 45 years or older by random digit dialing. Participants answered a questionnaire and were submitted to a clinical examination, ECG, echocardiogram and venous blood sample collection. BNP was measured by the BIOSITE® Triage meter. The association between BNP and independent variables was assessed by linear regression using the natural logrithm of BNP plasma concentration as the dependent variable.
Results: BNP levels were significantly higher in women than in men and this association was not changed when taking into account other determinants of BNP. Further analysis was stratified on gender. BNP increases with age, more steeply in men than women ($p<0.05$ for the interaction). In univariate analysis, BNP was associated in both men and women with LVSD, moderate-severe valvular abnormalities, left atrial diameter/body surface area, left ventricular mass index, systolic blood pressure, lower creatinine clearance and jugular venous distention on physical examination. In women it was also related with end-diastolic left ventricular diameter/body surface area and in men with changes in the segmental wall motion index. The final multivariable model includes as significant independent determinants of BNP levels: age, LVSF and left atrial dimension among women, and age, LVSF and systolic blood pressure among men. These models explain 17.2% and 32.3% of the variability of BNP, respectively in women and men.
Conclusion: The main determinants of BNP plasma levels in the population were female gender; age and left ventricular systolic dysfunction in both genders; left atrial size in women and systolic blood pressure in men. The association between age and BNP was significantly stronger among men than women.

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FAMILY HISTORY OF VENOUS DISEASES IN PATIENTS WITH VARICOSIS - RESULTS OF A POPULATION-BASED CROSS-SECTIONAL STUDY.

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Introduction: Diseases of the venous system belong to the most frequent diseases in the German population. However, the last comprehensive population-based German data stem from a study conducted in Tübingen in 1979. Since then, diagnostic methods have improved substantially. Also, the risk factor exposure has changed, e.g. lack of exercise, sedentary occupations. Practical experience and scientific studies indicate a familial predisposition to this disease. We examined this issue using actual epidemiologic data.
Methods: We conducted a population-based cross-sectional study in Bonn and its surrounding rural area (Recruitment period: 11/2000-12/2001; response: 59%) funded by the Federal Ministry of Health and the German Society of Phlebology. The study population comprised 3072 participants, 18 to 79 years of age. The investigation consisted of ascertaining a standardized medical history, physical examination, and duplex sonography of veins of the legs. The definition of varicosis of the leg is based upon the CEAP-Classification. 2 outcome definitions were used: 1) Participants were defined as having varicose veins if the clinical classification was at least C2, 2) Symptomatic varicose veins, i.e. clinical classification of at least C3. In both groups, those showing isolated spider-bursts / telangiectasia exclusively and those with exclusive postthrombotic etiology were excluded. Risk factors examined were family history of varicose veins (VV), thrombophlebitis of the legs (TL), deep venous thrombosis of the leg (VT), and crural ulcer (CU). Logistic regression, adjusted for age, sex and family size was used for calculation of odds ratios (OR) and 95% confidence intervals (95%-CI).
Results: 713 study participants (23%) had varicose veins with clinical classification of at least C2 (20% of all men, 26% of all women). 295 study participants (10%) showed symptomatic varicose veins as defined above (8% of all men, 11% of all women). Prevalences of family history (parents and siblings) were as follows: VV: 52%, TL: 14%, VT: 13%, CU: 8%. Results of the logistic regression were as follows: 1) Varicose veins: VV: OR=2.2 (95%-CI:1.8-2.6), TL: OR=1.9 (95%-CI:1.5-2.4), VT: OR=1.6 (95%-CI:1.2-2.0), CU: OR=2.0 (95%-CI:1.5-2.7). 2) Symptomatic varicose veins: VV: OR=1.7 (95%-CI:1.3-2.2), TL: OR=1.5 (95%-CI:1.1-2.1), VT: OR=1.4 (95%-CI:1.0-2.0), CU: OR=1.8 (95%-CI:1.2-2.5). Including the information on grandparents did not lead to relevant changes in results.
Conclusions: The association between family history of various forms of venous diseases and varicosis was confirmed by the results of this study.

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STROKE PATIENTS AND CAREGIVERS. A SOCIAL INTERVENTION RANDOMISED TRIAL

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Introduction: Stroke is a common disease with a well known psychosocial impact both on surviving patients and their caring family. However, there is no clear-cut information on the effectiveness of social support on patients' and caregivers outcome as measured through functional or psychosocial indices. We did a randomized controlled trial to assess the impact of a social work intervention on stroke patients and their informal carers.
Methods: We identified 301 patients admitted for a first ischemic stroke at the medical wards of a tertiary University Hospital, able to complete the needed questionnaires, and their carers. The patient-caregiver pairs were randomly assigned to routine care procedures (n=149) or to the intervention group (n=152). Intervention comprised two home visits at months 1 and 10 after discharge. During the visits participants were fully informed about every social support services in the community, needs assessed and orientation provided. Barthel index, the mini-mental state examination, the Nottingham health profile (NHP) and Beck's depressive inventory (BDI) were completed for the patients and NHP and BDI for caregivers, at discharge, 3 and 12 months. At baseline, no significant differences were found between patients in the intervention and the control group regarding social, demographic and clinical variables. However, caregivers in the intervention group scored significantly better in the mobility ($p<0.01$) and social isolation ($p=0.02$) scales of the NHP.
Results: At three months only slight differences were found between the two groups. However, at the 12 month evaluation patients in the intervention group presented a significantly higher mean (standard deviation) amelioration in the Barthel score - 19.7 (25.1) vs. 6.9 (29.3), $p<0.001$, and significantly higher improvements in every scale of NHP. The same effect on health related quality of life and depressive symptoms scores were observed among caregivers. The result observed was similar whether considering just the pairs with surviving patients or all participants evaluated according to the intention to treat.
Conclusion: A simple social service support intervention significantly increased stroke patients functional capacities and psychosocial indices, and the same effect was evident for their informal caregivers.

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A SYSTEMATIC REVIEW OF OBSERVATIONAL STUDIES OF FISH INTAKE, N-3 FATTY ACIDS AND CORONARY HEART DISEASE

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Introduction: Fish intake is currently recommended to reduce cardiovascular risk and as part of a Mediterranean-type diet, based on the physiological effects of fish oils (long-chain polyunsaturated n-3 fatty acids) and on the cardioprotective effect of fish intake and fish oils in secondary prevention randomized trials. However, in absence of primary prevention trials, and due to the possibility that contaminants in fish oppose the potential benefits of n-3 fatty acids, it is important to systematically evaluate the evidence from observational studies. In this study we undertook a comprehensive review of cohort and case-control studies of fish intake or n-3 fatty acid levels and clinical cardiovascular outcomes.
Methods: We performed a systematic literature search to identify studies presenting associations of dietary fish intake or objective measures of n-3 fatty acids with the risk of coronary heart disease (CHD), myocardial infarction (MI) or sudden cardiac death (SCD). We excluded studies that mixed fish intake with other dietary patterns, measured n-3 fatty acids not of marine origin, or were done in dialysis/transplant patients. We searched articles in all languages using MEDLINE, and references of published studies. For studies on fish intake, the adjusted relative risk (RR) for the highest versus lowest category is presented. For studies of n-3 fatty acids, differences in levels between cases and non-cases were selected, as well as RRs if provided by the authors.
Results: 18 cohorts and 4 case-control studies investigated fish intake and CHD, MI or SCD. For CHD mortality, 16 studies reported RRs for the highest vs. the lowest category of fish intake in a range between 0.39 and 2.2. Heterogeneity of the findings precluded the estimation of meaningful combined RRs. The same heterogeneity was observed for CHD incidence. For fatal MI and SCD, RRs in 6 studies ranged from 0.39 to 1.48, with a combined estimate of 0.65. For studies of fatal and non-fatal MI, reported associations ranged from 0.42 to 1.87. Six nested case-control studies, one cohort study, and 16 case-control studies measured n-3 fatty acid levels in human tissue. A similar degree of heterogeneity was found, with RRs ranging from 0.10 to 1.26 when comparing the highest to the lowest level of n-3 exposure.
Conclusions: Epidemiologic studies of fish intake or fish oil levels and CHD have shown both inverse and positive associations. Although several factors may explain this heterogeneity, including methodological differences among the studies, the possibility that fish intake may not be consistently protective deserves careful consideration, especially when promoting fish as part of a healthy, cardioprotective diet for the general population. Future research needs to investigate the reasons of these conflicting results, particularly in relation to environmental contaminants.