O7 - Comunicación Oral/Oral communication

Cardiovasculares I

Cardiovascular diseases I

Jueves 2 de Octubre / Thursday 2, October
11:30:00 a/to 13:30:00

Moderador/Chairperson:
Jaime Marrugat

049

CLASSICAL RISK FACTORS FOR MYOCARDIAL INFARCTION AND TOTAL MORTALITY IN THE COMMUNITY - 13-YEAR FOLLOW-UP OF THE MONICA AUGSBURG COHORT STUDY

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Introduction: The MONICA (MONItoring of trends and determinants in CArdiovascular disease) project in the region of Augsburg, Southern Germany, is the first population-based cohort study in Germany investigating the association of the risk factors hypertension, hypercholesterolaemia and smoking with incident myocardial infarction and total mortality, and to assess their impact at the population level.
Methods: At baseline, 1074 men and 1013 women aged 45-64 years were randomly selected from the population in the Augsburg region and extensively interviewed and examined regarding their cardiovascular risk profile. They were traced over 13 years from 1984-1997. We calculated incidence rates, hazard rate ratios, population attributable risks (PAR), and rate advancement periods (RAP) according to the three risk factors and their combinations.
Results: Among men, 107 myocardial infarctions and 204 total mortality events occurred during the study period; in women the number of total mortality cases was 102. The three classical risk factors were associated with incident myocardial infarction in men and with total mortality in men and women over a period of 13 years. Heavily smoking men had a particularly high risk of total mortality (HRR=4.2; 95% CI 2.5-7.0) and myocardial infarction (HRR= 3.8; 1.9-7.6). Men with treated hypertension were at equally high risk for both total mortality (HRR 2.4; 1.5-3.7) and myocardial infarction (HRR=2.4; 1.3-4.3). In women, treated hypertension (HRR=2.5; 1.5-4.1) and hypercholesterolaemia (HRR=2.0; 1.1-3.8) were most strongly related to total mortality. Regarding the association of risk factor combinations and myocardial infarction among men, the presence of all three risk factors simultaneously (HRR=7.9; 3.6-17.3) and the combination smoking/ hypercholesterolaemia (HRR=5.8; 3.2-10.5) were particularly hazardous. In total, the three risk factors contributed 54% of the burden of myocardial infarction in the male study population. The rate advancement periods for myocardial infarction related to treated hypertension, hypercholesterolaemia and heavy smoking were 10.5, 5.8 and 15.8 years, respectively.
Conclusions: Our results confirm the outstanding impact of the classical risk factors on myocardial infarction and total mortality in a southern German population. Coronary heart disease is largely preventable through risk factor reduction. Therefore, risk factor counselling, education and treatment are crucial to prevent people from developing the disease or dying prematurely.

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IN-HOSPITAL DELAYS IN PATIENTS WITH ACUTE STROKE - THE BERLIN ACUTE STROKE STUDY (BASS)

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Introduction: Stroke is the third leading cause of mortality and the leading cause of neurological disability in most western countries. The success of any reperfusion therapy crucially depends on its early application. In-hospital delays of patients with acute stroke are therefore major limiting factors of effective treatment. The objective of this study was to determine the interval between hospital admission and first brain imaging (Computer Tomography (CT) or Magnetic Resonance Tomography (MRT)) and its underlying factors in patients with acute stroke.
Methods: From September 2000 to August 2001 consecutive patients with symptoms of an acute stroke were prospectively identified in 4 major hospitals (2 academic, 2 general) located in the inner district of Berlin (population 300,000). Data were collected via standardised interviews with patients and their relatives, emergency department documentation, medical records and imaging files. All hospitals had a 24-hour CT service, the academic hospitals also a 24-hour MRT facility. The dependent variable in the analysis concerning delay was the time interval from hospital admission to CT/MRT. For multivariable analysis of time delay Cox proportional hazards model was used.
Results: A total of 558 patients (45% female, mean age 66.8 ± 13.5 years) with confirmed stroke was included in the study. The median interval between hospital admission and CT/MRT scan was 151 min (range 1-6868). Multivariable analysis showed that an increasing i.e. more severe initial NIH-stroke scale score (HR=1.08, 95% CI 1.06-1.10), private health insurance (HR=1.85, 95% CI 1.27-2.68), admission at weekend (HR=1.35, 95% CI 1.08-1.67) and a pre-hospital delay shorter than three hours (HR=1.28, 95% 1.07-1.54) were associated with a significantly reduced in-hospital time interval. Living alone (HR=0.78, 95% CI 0.64-0.95) and admission to two specific hospitals, one academic (HR=0.63, 95% CI 0.51-0.79) and one general (HR=0.78, 95 % CI 0.63-0.10) were associated with a significantly increased in-hospital time interval.
Conclusions: In-hospital delays of patients with acute stroke are associated with factors that correlate with clinical needs (severity of symptoms) but also with sociodemographic details and structural factors (day of admission). Considering the temporal urgency of therapeutic measures in acute stroke there is considerable room for improvement of time-management in these patients.

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CHANGES IN CARDIOVASCULAR RISK IN THE URBAN POPULATION OF POLAND- 10 YEARS OBSERVATION WITHIN THE CINDI WHO PROGRAMME

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Introduction: Since 1992 the significant decrease in cardiovascular mortality in Poland has been observed. However, morbidity as well as early mortality rates due to myocardial infarction has not changed. It is crucial to identify the most important risk factors and follow their trends in long-term observation in order to undertake effective preventive and treatment strategies. The objective of this study was to observe structure, intensity and changes in the main cardiovascular risk factors in urban population in the years 1991-2001.
Methods: The study consisted of three independent randomly selected samples of residents of Lodz - the main CINDI Poland Program urban demonstration area. A total of 1869 persons in the year 1991, 2393 persons in 1996 and 1842 in 2001 aged 18 and over underwent lifestyle questionnaire and physical examination, blood pressure and anthropometrical measurements, and laboratory tests (blood lipids and glucose concentration).
Results: During 10 years of observation significant increase in the mean total cholesterol level was observed in both sexes. Frequency of hipercholesterolemia increased form 38% in 1991 to 47% in 2001 ($p<0,05$). Some positive changes were noticed in women in the mean value of systolic blood pressure and frequency of hypertension (decrease from 39% to 32%, $p<0,01$). In men frequency of hypertension significantly increased from 38% to 45% ($p<0,01$). The systematical increase in prevalence of overweight and obesity among men was observed (51% in 1991 vs 57% in 2001) while in women frequency of BMI over 25 kg/m^2 fell from 53% to 44% in 10-year observation. An important decrease in prevalence of smoking was noticed in both sexes (from 62% to 43% in men and form 39% to 28% in women, $p<0,001$). Nearly 23% of inhabitants of Lodz in 2001 did not have any of analyzed risk factors. In the year 2001 the presence of one risk factor was identified in 33% of participants, two risk factors in 25% and three or more risk factors in 24% of men and 16% of women.
Conclusions: General cardiovascular risk decreased during 10 years of observation with favorable changes in smoking prevalence in men and obesity in women. However, nearly 25% of population in 2001 represented high risk of cardiovascular event. There is a need of more effective health promotion actions, lifestyle modification and early detection and treatment of the most important risk factors in the studied population.

052

IMPACT OF THREE CURRENT HYPERTENSION GUIDELINES ON THE AGE-SEX DISTRIBUTION AND THE SIZE OF THE TREATMENT-ELIGIBLE FRACTION OF THE GENERAL POPULATION

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Objectives: To assess the impact of current guidelines for the management of hypertension on the number of subjects requiring treatment in the general population.
Methods: Pooled analysis of three independent cross-sectional surveys sampled at random from the MONICA Augsburg study region. 5258 men and 5202 women, aged 35 to 74 years, participated in medical examinations and interviews. We used information obtained for each participant to assess individual absolute cardiovascular risk (CVD: fatal and non-fatal myocardial infarction and stroke; Framingham score).Specific algorithms were devised in accordance with recommendations of three current guidelines (JNC VI, WHO/ISH, BHS) to identify individuals eligible for antihypertensive therapy.
Results: The proportion eligible for antihypertensive therapy rose with age. It was higher for men in any age group. In each age-sex-group, JNC VI produced substantially more eligibles (age standardized; men: 40%, women: 30%) than the WHO/ISH (m 34%, w 25%) and BHS guidelines (m 29%, w 19%). The predicted 5-year CVD risk was on average lower for JNC VI than for WHO/ISH or BHS eligibles, particularly among the youngest. Extrapolated to the respective age range in the Federal Republic of Germany, JNC VI recommendations implied an additional treatment of about four million people over and above the 9.9 million men and women already eligible for treatment following the recommendations of the BHS.
Conclusion: Our cross-sectional evaluation shows that the three most commonly used guidelines for the management of hypertension lead to impressive differences in the number of people in the general population who are deemed eligible for antihypertensive treatment. As the treatment of hypertension is often life long, eligibility criteria thus have direct economic implications in terms of the total cost of primary prevention. Future guidelines need to explicitly assess, present and discuss these public health and economic implications.

053

POPULATION EFFECTS ON INDIVIDUAL SYSTOLIC BLOOD PRESSURE: A MULTILEVEL ANALYSIS OF WHO MONICA PROJECT

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Background: Individuals from the same population share a number of socioeconomic, health care system, genetic and life-style factors that may condition a common level of blood pressure over and above individual characteristics. Understanding this population effect is relevant for both etiological research and strategies of prevention.
Methods and results: By multilevel regression analyses we quantified the extent to which individual differences in systolic blood pressure (SBP) could be attributed to population level effects. We also investigated a possible interaction between the population in which the person lived, and pharmacological (blood pressure lowering drugs [BPLD]), as well as life-style/non-pharmacological (body mass index [BMI]) effects on individual SBP. We analysed data from 23,796 men and 24,986 women aged 35 to 64 years, from 39 MONICA Study Populations that participated in the final survey of this WHO project (1990-1996).
SBP increased with BMI, use of BPLD and population variability in SBP level, and decreased with smoking in women. About 7-8% of all SBP differences between subjects were attributed to the population in which the person lived. However, population level influences varied with individual BMI and use of BPLD, and were particularly strong in overweight women taking BPLD (i.e., 20%).
Conclusions: We found empirical evidence of a collective phenomenon affecting individual SBP over and above individual factors. Environmental factors influence individual SBP level by modifying the effects of both BPLD and BMI. Multilevel analysis suggest that both population and high risk cardiovascular preventive approaches need to consider individual and population heterogeneity regarding blood pressure determinants - a heterogeneity that is overlooked when only average values are reported in ecological analysis.
Both mass and high-risk strategies of prevention need consider that population factors (e.g. medical practice habits, societal attitudes to healthy lifestyles) affect individual SBP over and above individual characteristics. However, to improve the effectiveness of these strategies, population differences regarding individual determinants of blood pressure need to be considered.

054 PREVALENCE OF THE METABOLIC SYNDROME IN AN AREA WITH HIGH INCIDENCE AND MORTALITY BY HEART ATTACK

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Introduction: The Region of Murcia is an area in the Spanish southeast showing one of the highest age-adjusted incidence and mortality rates by heart attack in the country. One of the main hypotheses that could explain this situation is the high prevalence of obesity and increased fasting glucose, possibly added to other cardiovascular risk factors. Here we introduce the prevalence of metabolic syndrome in this population as well as its components, taken one by one.
Methods: Trough a population survey addressed to people older than 19 we have measured the components of the metabolic syndrome following a recently review by the Adult Treatment Panel III (ATP III) from the National Cholesterol Education Program, 2001. The sample size has been of 2,562 people and the response rate of 59%. The metabolic syndrome is defined as the presence of three or more of the following risk factors: abdominal obesity (>102 cm in men or > 88 in females); serum triglycerides (≥ 150 mg/dL); cholesterol HDL (<40 mg/dL in males and <50 mg/dL in females); blood pressure (≥ 130/≥ 85 mmHg); and fasting glucose (≥ 110 mg/dL).
Results: The prevalence of the metabolic syndrome is 18 % (95% CI 15.7-20.5) being slightly higher in men (19.7%) than in females (16.5%). It gradually rises with age and it is four times more frequent among people aged 70 or older than in people younger than 40. Approximately one out of two women (42.4%) and one out of three men (27.7%) aged 70 or older are affected. The risk factors more frequently involved are high blood pressure and central obesity, followed by serum increase in glucose. The less involved are, however, the alterations in the metabolism of lipids.
Conclusions: The prevalence of the metabolic syndrome is high and similar to the one reported in the Canary Islands recently (24.4%) -with also high mortality by coronary ischaemia- and in the USA (21.8%). In absence of longitudinal studies that could confirm it, the most plausible explanation of the high frequency of ischaemic disease in our area is due, at least partially, to this constellation of signs that the metabolic syndrome is.

055 DISEASE MANAGEMENT PROGRAMS EFFECT ON READMISSION OF OLDER HEART FAILURE PATIENTS

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Objective: To assess the effect of disease management programs (DMP) on hospital readmissions among older patients with heart failure (ROPHF).
Methods: As part of a larger systematic review to assess the association between psychosocial factors and ROHFP, we reviewed studies on the effects of DMP on ROPHF as compared with usual care. Articles were identified from searches in Medline (1966-2002) and Embase (1980-2002), in the Cochrane Library, and scans of reference lists of review articles and of all manuscripts selected for review. Inclusion criteria were: a) Papers including an experimental evaluation of the effect of a DMP on ROPHF. b) Study includes patients aged 65 years or older with a previous hospitalisation due to heart failure. Exclusion criteria were: a) From the reported data, it was not possible to quantify the association between DMP and ROPHF; b) Less or equal than 25% patients suffered heart failure; c) Less than 50% patients were 60 years old or over; d) Papers which duplicated information from other papers. Disagreements in data extraction were settled through joint discussion of the research team. The association between DMP and ROPHF across the studies was summarized with odds ratios (OR) and their 95% confidence intervals (CI) obtained from random or fixed effects models, depending on the results of heterogeneity tests. For purpose of the meta-analysis only studies which presented information as proportions of patients readmitted and not readmitted were included.
Results: A total of 20 randomised trials where selected for review, and the results of 13 of them were meta-analysed (involving 2,511 patients). DMP showed beneficial effects on all-cause rehospitalizations (OR = 0.78, 95% CI: 0.61 to 0.98), rehospitalizations due to heart failure (OR =0.57, 95% CI: 0.44 to 0.73) and all-cause rehospitalization or death (OR =0.66, 95% CI: 0.52 to 0.84). DMP were cost-saving in 9 of the 10 studies that reported cost data. These results were qualitatively consistent with those of the randomised trials which were not included in the meta-analysis. A total of 20 non-randomised trials on the association between DMP and ROPHF where selected for review, but only six of them where meta-analysed. The beneficial effect of DMP observed in non-randomised trials was greater than that found in randomised trials (all cause rehospitalizations OR= 0.28, p= 0.005, rehospitalizations due to heart failure OR= 0.23; p=0,003). All non-randomised trials (10) that reported cost data observed cost-savings associated with DMP.
Conclusions: DMP reduce ROPHF when compared with usual care, and appear to be cost-saving. Further studies are needed to establish the effectiveness of the different components of DMP.

056 OPTIMAL, NORMAL AND HIGH-NORMAL BLOOD PRESSURE - CHARACTERISTICS OF INDIVIDUALS AND PREVALENCE OF CARDIOVASCULAR RISK FACTORS

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Introduction: A higher risk of cardiovascular diseases has been recently described in individuals with high-normal blood pressure in the Framingham cohort. However, the benefit of reducing blood pressure pharmacologically has not been demonstrated. Moreover, the impact of blood pressure reduction cannot be predicted as an isolated phenomenon given the clustering of cardiovascular risk factors and the interaction between them. The aim of this study was to assess the prevalence of other risk factors according to classes of blood pressure in individuals without hypertension.
Methods: We have cross-sectionally observed men and women aged 20 years or over, selected from the community by random digit dialling. We have excluded people under treatment with any anti-hypertensive agent or whose blood pressure was =140/90mmHg. Therefore the results refer to 521 normotensive participants (208 men and 313 women). Categories of blood pressure were defined according to the recommendations of JNC VI (optimal <120/80, normal 120-129/80-84, high-normal 130-139/85-89). We calculated means and proportions adjusted for age by analysis of covariance and logistic regression, respectively. Diabetes was considered as self-reported or fasting glucose >125mg/dl.
Results: The proportion of individuals with optimal blood pressure was significantly higher in women (p<0.001). In both genders, age increased progressively with blood pressure (p<0.001 in women and p=0.03 in men). There was also a progressive increase in the adjusted mean levels of triglycerides (women: 97, 100 and 115mg/dl, p=0.03; men: 110, 125 and 148mg/dl, p=0.08, respectively in optimal, normal and high-normal blood pressure), body mass index (women: 24.8, 24.8 and 26.8kg/m^2, p=0.001; men: 25.0, 24.8 and 26.8, p=0.08), waist-to-hip ratio (women: 0.82, 0.82 and 0.86, p=0.001; men: 0.91, 0.92 and 0.93, p=0.13), diabetes prevalence (3.8, 9.6 and 12.0%, p=0.14; men: 5.5, 5.3 and 11.3%, p=0.32), and only among men uric acid (4.8, 5.1 and 5.4 mg/dl, p=0.06). The prevalence of smoking decreased progressively with blood pressure (women: 23.8, 20.2 and 14.9%, p=0.34; men: 49.6, 44.0 and 45.8%, p=0.86).
Conclusion: Besides higher blood pressure, individuals with high-normal blood pressure present other characteristics associated with higher cardiovascular risk. Therefore, the interpretation of the effect of any possible intervention to lower blood pressure must take this into account.