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P4 Inflammation and prolonged QT time: Results from the CARdiovascular disease, Living and Ageing in Halle (CARLA) study

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Background: Previous research found an association of CRP with QT time in population based samples. Even more, there is evidence of a substantial involvement of the tumor necrosis factor-alpha system in the pathophysiology of cardiac arrhythmia, while the role of Interleukin 6 remains inconclusive.
Objective: To determine the association between inflammation with an abnormally prolonged QT-time (APQT) in men and women of the elderly general population.
Methods: Data descend from the baseline examination of the prospective, population-based Cardiovascular Disease, Living and Ageing in Halle (CARLA) Study. After exclusion of subjects with atrial fibrillation and missing ECG recording the final study cohort consisted of 919 men and 797 women. Blood parameters of inflammation were the soluble TNF-Receptor 1 (sTNF-R1), the high-sensitive C-reactive protein (hsCRP), and Interleukin 6 (IL-6). In accordance with major cardiologic societies we defined an APQT above a QT time of 460ms in women and 450ms in men. Effect sizes and the corresponding 95% confidence intervals (CI) were estimated by performing multiple linear and logistic regression analyses including the analysis of sex differences by interaction terms.
Results: After covariate adjustment we found an odds ratio (OR) of 1.89 (95% CI: 1.13, 3.17) per 1000 pg/mL increase of sTNF-R1 in women, and 0.74 (95% CI: 0.48, 1.15) in men. In the covariate adjusted linear regression sTNF-R1 was again positively associated with QT time in women (5.75ms per 1000 pg/mL, 95% CI: 1.32, 10.18), but not in men. Taking possible confounders into account IL-6 and hsCRP were not significantly related to APQT in both sexes.
Conclusion: Our findings from cross-sectional analyses give evidence for an involvement of TNF-alpha in the pathology of APQT in women.

P5 Stability of high blood pressure over time among young adults in the large VHM&PP cohort

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There is still debate whether young adults with high blood pressure should be treated with drugs or get life-style counselling. We aimed to assess the persistence of high blood pressure in the Vorarlberg Health Monitoring & Promotion Programme (VHM&PP).
In this study, all cohort members 18-29 years of age undergoing a first health examination between 1985 and 1999 with high blood pressure (systolic ≥140 or diastolic ≥90 mmHg) were included. We also looked at isolated systolic hypertension (ISH) (systolic ≥140 and diastolic <90 mmHg). Other risk factors included sex, smoking, body mass index (BMI), hypercholesterolaemia (HC), hypertriglyceridaemia (HT), impaired fasting glucose (IFG), and elevated gamma-glutamyltransferase (gGT). Follow-up ended at the end of 2005.
The subcohort consisted of 42,586 young adults of whom 7,006 (16%) presented with grade 1 hypertension or higher. Of these 2,763 (6%) had ISH. At the next examination, after one year or more, 5,165 participants with hypertension before returned and of these 2,218 (43%) were still affected. For ISH the figures were 2,025 and 412 (20%) respectively.

Young adults with persistent hypertension were 72% male, had a median BMI of 24.9 kg/m2, and 30% were current smokers. 665 had no other cardiovascular risk factor, 791 had one, 513 had two, and 249 three or more additional ones. A logistic regression analysis revealed that male sex, BMI, HC, IFG and gGT favoured persistent hypertension, whereas smoking seemed to slightly protect against it. For persistent ISH smoking showed a similar protective effect just like HT, while male sex and BMI showed a positive relation.
Neglecting high blood pressure among young adults over a long time period could lead to irreversible damage. Life-style factor intervention might play an important role, but it could be too little, too late, so especially when other risk factors are present, treatment could be sensible.
Mancia G, Fagard R, Narkiewicz K, Redó J, et al. 2013 ESH/ESC Guidelines for the management of arterial hypertension. J Hypertens 201331:1281-1357

P6 Combined impact of healthy lifestyle factors on chronic disease risk: a systematic review

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Background: Several healthy lifestyle factors have been shown to reduce the risk for chronic diseases. The aim of the present systematic review was to summarize the current literature on the associations between the combined impact of lifestyle factors and chronic disease risk in prospective epidemiological studies.
Methods: A systematic literature search was conducted in PubMed, Web of Science and EMBASE to identify studies using a lifestyle index composed of at least three lifestyle factors in prospective cohorts of healthy individuals.
Results: We identified 63 studies which predominantly investigated lifestyle indices composed of smoking, physical activity, body mass index or waist circumference, consumption of alcohol and a healthy diet or single healthy foods. Out of these studies, 35 studies examined the combined impact of lifestyle factors on cardiovascular events (e.g., stroke, coronary heart diseases or cardiovascular diseases) or cardiovascular mortality, 23 studies on cancer incidence and/or cancer mortality, seven on risk of type 2 diabetes and three studies on hypertension. Despite variations in the composition of the lifestyle scores, the results of the studies were very homogeneous indicating a prevention of chronic diseases with increasing adherence to a healthy lifestyle.
Conclusion: There are many studies indicating that a healthy lifestyle composed of non-smoking, being physical active, having a normal weight, moderate alcohol consumption and adherence to a healthy diet may prevent the most common chronic diseases and mortality.

P7 Schlaganfallpatienten mit Vorhofflimmern: Hat der Zeitpunkt des Therapiebeginns mit Marcumar Einfluss auf die Überlebensdauer?

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Hintergrund: Der kardioembolische (ischämische) Schlaganfall (KEM-IS) wird zumeist durch Vorhofflimmern (VHF) ausgelöst, und stellt gerade im höheren Lebensalter die häufigste Ursache der ischämischen Schlaganfälle insgesamt dar. Der KEM-IS stellt 30-35% aller ischämischen Schlaganfälle, und ist verantwortlich für besonders schwere Verläufe, schlechteres Outcome, einen höheren Anteil an Pflegebedürftigkeit sowie die höchste Mortalitätsrate. Orale Antikoagulation (OAK, hier Marcumar)

Stability of high blood pressure over time among young adults in the large VHM&PP cohort

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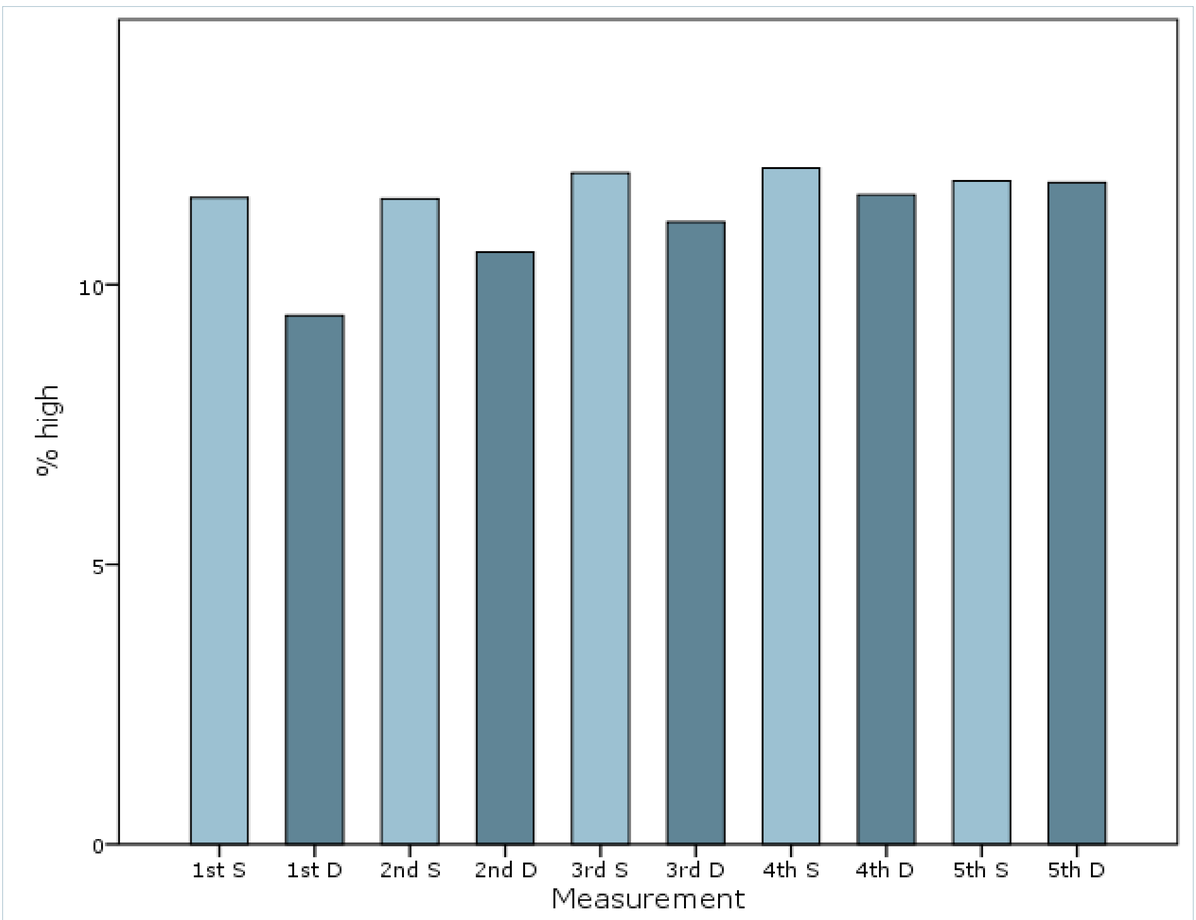
Introduction

Little is published about longitudinal trends among young adults with high blood pressure and it seems difficult to reach a consensus on the question whether they should be treated with drugs or just get lifestyle counselling. With data available from the Vorarlberg Health Monitoring & Promotion Programme (VHM&PP), based on prospectively gathered, repeated routine health examinations of over 185,000 adult participants, we aimed to assess the persistence of high blood pressure of the young and the risk factors involved.

Consecutive proportions of high systolic ≥140 mm.Hg (S) and high diastolic ≥90 mm.Hg (D) blood pressure



Methods

All cohort members between 18 and 29 years of age who had their first health examination 1985 to 1999 were included in the study, leading to a total of 42,586 participants in the subcohort. The follow-up ended 31st December 2005.

High blood pressure (grade 1 and higher) was defined as systolic BP ≥140 or diastolic BP ≥90 mm.Hg and isolated systolic hypertension (ISH) as ≥140 and <90 mm.Hg resp. Risk factors included sex, ever smoking status, body mass index (BMI), and:

- hypercholesterolaemia (HC): >190 mg./dl.
- hypertriglyceridaemia (HT): >150 mg./dl.
- impaired fasting glucose (IFG): >102 mg./dl.
- elevated gamma-glutamyltransferase (gGT):
  - female ≥18 units/l., male ≥28 units/l.

Logistic regression models were applied to evaluate the associations of the covariates with persistent high blood pressure at the second examination.

Results

In the subcohort 7,006 (16%) presented with high blood pressure at the first examination; among them were 39% with ISH. At the next round, 5,165 returned and of these 2,218 (43%) still had hypertension; persistent ISH amounted to 20%. At every round of examination about 75% of the participants showed up, after an interval of at least 1 year (median at 3 years and decreasing with every round).

Young adults with persistent hypertension were 72% male, had a median BMI of 24.9 kg./m.^{2}, and 35% had ever smoked. The proportions affected by other cardiovascular risk factors were HC 59%, HT 30%, IFG 14%, and elevated gGT 16%.

The regression analysis revealed that male sex, BMI, and the additional risk factors favoured persistent hypertension, whereas smoking showed a small negative effect. Regarding persistent ISH there seemed to be a negative relation with HT, while male sex and BMI appeared with positive associations.

Risk estimates of persistent hypertension

Exposure	High blood pressure		Isol. syst. hypertension	
	OR	95% CI	OR	95% CI
Male sex	3.06	2.77 to 3.38	4.34	3.42 to 5.51
Ever smoked	0.91	0.83 to 1.00	0.84	0.69 to 1.04
Body mass index	1.17	1.15 to 1.18	1.10	1.07 to 1.13
HC	1.27	1.16 to 1.39	0.92	0.75 to 1.12
HT	1.13	1.01 to 1.26	0.70	0.53 to 0.93
IFG	1.22	1.07 to 1.39	1.31	0.98 to 1.75
Elevated gGT	1.29	1.13 to 1.47	0.95	0.67 to 1.34

Discussion

Neglecting high blood pressure among young adults over a long period of time could inevitably lead to irreversible cardiovascular damage. Persistent hypertension at relatively low age might be counteracted at least by lifestyle intervention. For ISH this has already been recommended, in addition to careful monitoring.

About a quarter of the individuals in this study did not turn up at the next examination. The question is whether this especially concerned the relatively healthy, those in a rather bad shape, or both. The results might therefore be biased. Naturally, this also applies because of missing confounders.

The presence of multiple risk factors, next to high blood pressure, was quite high. When risk factors are simultaneously present, the metabolic syndrome and further complications can crop up in course of time. Since generally there are indications of considerable over-treatment in low-risk groups and under-treatment in high-risk groups, taking risks into account might be sensible. In many instances the use of antihypertensive medication would seem prudent, next to life-style consultation and frequent check-ups.

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