Distribution of Changes in Systolic Blood Pressure and Waist Circumference – Indicators for Primary Prevention

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ABSTRACT
Eliminating or diminishing risk behaviors that lead to cardiovascular diseases could be achieved through primary prevention during the general practice visits. However, there is difference in effectiveness of preventive measure while there are no symptoms, and reactive response when burden of diseases start to show. We analyzed trends in gender and age-pattern changes of systolic blood pressure and waist circumference, as a reflection of primary prevention. Results show increase of values for both indicators in both genders, through youngest and middle age groups. In the oldest group stagnation and even decrease of values is evident. These results signal possible absence of primary prevention in younger age groups and some action when symptoms occur. It is hard to distinguish weather lower values is consequence of medication or lifestyle change. The absence of primary prevention is usually missed opportunity that is charged later both to the patient and health care system.

Key words: waist circumference, systolic blood pressure, primary prevention

Introduction
There is a body of evidence showing that primary prevention can contribute to the changes in lifestyle that could otherwise lead to the cardiovascular diseases1–4. However, it is very important to stress the difference in effectiveness of preventive measures. Primary prevention that, generally, involves the prevention of diseases before their biological onset, while there are no symptoms of disease, is more effective, than reactive response when burden of cardiovascular diseases start to show. The absence of primary prevention is usually missed opportunity that is charged later both to the patient and health care system. In Croatia general practitioners (GP) often mix primary and secondary prevention and under primary prevention assume disease screening with follow-up of the findings and systematic examinations.

Waist circumference (WC) as indicator of abdominal obesity and systolic blood pressure (SBP) as key risk factor for cardio and cerebro-vascular diseases, are established indicators used in population health assessment, and changes in their distribution over the time could reflect general health trends and cardiovascular disease trends in various populations. Also they reflect weather existing primary prevention is well targeted and effective5.

The aim of this article is to analyze the trends in gender and age-pattern changes of these two indicators as a reflection of primary prevention in general population. These results could help identify more effective strategies and implementation of national programs.

Materials and Methods
Data for this study were obtained from the Croatian Adult health Survey (CAHS) in 2003 followed by 2008. Further details on CAHS are provided elsewhere6. Sample consisted of cohort of 3229 participants who were interviewed in both years. WC and SBP were analyzed by using percentile distribution at 5, 25, 50, 75 and 95 percentile points in years 2003 and 2008. The analysis was performed by gender and three age groups; up to 34 years, 35 to 64 years and over 65 years. Cut off values for WC were 88 cm for women and 102 cm for man7 and for SBP 140 mmHg for both genders8.

Received for publication September 1, 2011
Results

Results are presented in figures 1–4. Values of SBP show same pattern of changes for both gender and age groups. Pattern of changes for the youngest and middle age group could be described as continuous shift of SBP to higher values, while for oldest group we can observe continuous shift to lower values. Increase between years is almost the same for both genders, but woman has lower values of SBP in the youngest age group than man. It is interesting that in the oldest group when both genders reached high values of SBP between 185 and 190mm Hg, women have better results in lowering those values. Overall increase of SBP values was higher during the 2003 around 50% and in 2008 that increase was lower around 30% (Figures 1 and 2).

Values for WC also show same, but increasing pattern, of changes for both gender and all age groups. In youngest age group the increase of population with over the recommended values is most dramatic 25% and in middle age group the increase between two periods is around 10% for females. In the oldest group values stagnate and increase is minimal Males are in general slimmer, and increase is around 12% in the youngest age group, in the middle and oldest age groups there are no changes. Women start increase in youngest group at 25th and at this age around 50% in 2008 had values higher than recommendations. This percentage is slowly increasing over the age and reaches 75% in oldest age group. Men show same increase trend at all percentiles in the youngest age group and in that group around 30% are over recommended values. Across the age groups they stagnate and 50% are over recommended values in the middle and oldest age group (Figures 3 and 4). Slimmer women stay slim, while women with higher values of WC show higher increase over the time except for the oldest age group.

Discussion

While blood pressure is one of the oldest diagnostic tools, waist circumference is first introduced in mid nineties as the best anthropometric predictor for the cardiovascular risk. It soon became routine diagnostic tool thanks to its simplicity, velocity and almost no cost. In Croatia according to the Plan and Program of measures for Healthcare primary prevention should be in-
corporated in everyday practice of all GPs. While SBP is routinely measured at all visits it is unclear how often and to whom, WC is measured and if it is recorded in medical documentation. In authors personal experience WC was never measured. Our results indicate that most neglected are young age groups that do not show any response and where spontaneous grow of indicator values is present. This could be strong signal of non existing primary prevention in those groups. In women group we can observe highest increase in both indicators values, although the initial values were lower than in same age in man group. It seems that problem of WC is not adequately perceived, which could be explained by the fact that most women give birth in that period and that increase of abdominal fat is attributed to pregnancy and GPs feels there is no need for prevention or that gynecologist should address these deviations. One study showed that around 10% of women in Croatia gain more than 14 kg in pregnancy. In the older age higher values are attributed to menopause. These results are in concordance with some other studies in Croatia that show that more advice is given to women in the middle age group with lower education, unemployed and housewives with higher body mass index and higher SBP than trended women and unmarried woman. In the elderly group most advices get women who visit general practitioner the most. This strongly reflect that GPs miss the idea of primary prevention and react when symptoms or disease occur. This could be explained with findings of Pavlekovic et al. that GPs in Croatia consider more important public health isue problems of alcohol and smoking than unbalanced nutrition or physical activity. Also they recognized more their role in secondary and tertiary prevention than in nutrition or physical activity. Also they recognized more problems of alcohol and smoking than unbalanced nutrition or physical activity. Also they recognized more their role in secondary and tertiary prevention than in nutrition or physical activity.

Acknowledgements

This study was supported by the Croatian ministry of Science, Education and Sport, grant number 108-1080135-0264.

REFERENCES

PROMJENA DISTRIBUCIJA SISOLIČKOG TLAKA I OPSEGA STRUKA – INDIKATORI PRIMARNE PREVENCIJE

SAŽETAK

Smanjenje ili eradicacija rizičnih ponašanja koji mogu dovesti do pojave kardiovaskularnih oboljenja može se postići primarnom prevencijom kroz rad liječnika obiteljske medicine. Važno je napomenuti da postoji kvalitativna razlika u savjetovanju kad simptomi bolesti još ne postoje i kad bolesnik već osjeća teret bolesti. Cilj ovog rada je razmotriti promjene dvaju indikatora kardiovaskularnih bolesti; sistolički tlak i opseg struka prema spolu i dobnim skupinama. Rezultati su pokazali porast vrijednosti za oba indikatora u oba spola te najmlađu i srednju dobu skupinu. U najstarijoj doboj skupini vidljiva je stagnacija i/ili pad vrijednosti indikatora. Ovi rezultati signalizira mogućizostanak primarne prevencije u ovim dobnim skupinama i neku aktivnost kod pojave simptoma, ali je teško razlikovati da li je pad vrijednosti indikatora posljedica medikacije ili promjena `ivotnog stila. Izostanak savjetovanja kao primarne prevencije može se smatrati izgubljenom prilikom koja se kasnije naplaćuje i bolesnicima i zdravstvenom sustavom.