

Što se može poduzeti na razini pučanstva da se smanji rizik za kardiovaskularne bolesti?

Actions to be taken at the level of the population to reduce the risk of cardiovascular diseases?

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SAŽETAK: Nedavno su europski eksperti načinili pregled i analizu svih postojećih dokaza o mogućnostima utjecaja na razini pučanstva na glavne čimbenike rizika za kardiovaskularne bolesti (KVB) — hranu, tjelesnu neaktivnost, pušenje, alkohol, stres i društvenu deprivaciju kao i na onečišćenje zraka. Dali su i preporuke s ciljem da se pomogne vlastima na različitim razinama (međunarodnoj, nacionalnoj i regionalnoj) da odaberu najprikladnije strategije za smanjenje rizika od KVB. Na temelju tih preporuka u ovom se preglednom članku analiziraju spomenuti čimbenici rizika s posebnim naglaskom na stanje u Hrvatskoj.

KLJUČNE RIJEČI: čimbenici rizika, kardiovaskularne bolesti, populacija, Hrvatska.

SUMMARY: Recently European experts have reviewed the available evidence concerning the effects of population level changes on the major modifiable risk factors for cardiovascular diseases (CVD) — food, physical inactivity, smoking, alcohol, stress and social deprivation as well as air pollution. They have given their recommendations aiming to assist authorities at different levels (international, national and regional) in selecting the most adequate risk management strategies to prevent CVD. Based upon these recommendations in this review, the same risk factors are analyzed particularly referring to the situation in Croatia.

KEYWORDS: risk factors, cardiovascular diseases, population, Croatia.

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Uvod

Nedavno je skupina stručnjaka u ime Europskog udruženja za kardiovaskularnu prevenciju i rehabilitaciju (*European Association for Cardiovascular Prevention and Rehabilitation* — EACPR) objavila programatski članak o tome što bi se trebalo provesti na razini pučanstva da se smanji rizik za kardiovaskularne bolesti (KVB)¹. Iako se na prvi pogled može činiti da se radi o poznatim činjenicama, taj članak zapravo predstavlja prvi znanstveno utemeljeni stav Europskog kardiološkog društva (*European Society of Cardiology* — ESC) o mjerama koje bi države i zajednica općenito mogli poduzeti na razini populacije za poboljšanje kardiovaskularnog zdravlja (zakonodavstvo, porezi, označavanje proizvoda...). U njemu je dan sistematski pregled svih istraživanja o tom području i na temelju objavljenih znanstvenih studija načinjena je po prvi puta evaluacija uspješnosti tih mjera. Naime, sve pa i one najnovije smjernice o prevenciji KVB usmjerene su na sprječavanje pojave tih bolesti u pojedinaca, odnosno na liječenje čimbenika rizika u pojedinaca koji imaju povećani rizik za te bolesti²⁻⁴. Nedostajala je, međutim, sustavna analiza učinaka mjera za sprečavanje KVB u pučanstvu i objektivna procjena njihove djelotvornosti kako bi na temelju toga vlade, uprave gradova, međunarodne orga-

Introduction

A group of experts has recently on behalf of the European Association for Cardiovascular Prevention and Rehabilitation — EACPR) published a programmatic article on what should be undertaken at the level of the population to reduce the risk of cardiovascular disease (CVD)¹. Although at a first glance it might seem that these are the known facts, this article is actually the first scientifically based position of the European Society of Cardiology — ESC regarding the steps that the states and community take at the level of the population to improve the cardiovascular health (legislation, taxes, labeling products ...). It contains a systematic overview of all the studies on such issues and the evaluation of the performance of these measures has been made for the first time on the basis of the published studies. Namely, even the latest guidelines on CVD prevention are aimed at preventing the occurrence of such diseases in individuals or the treatment of risk factors in individuals who are at increased risk for such diseases²⁻⁴. However, we lacked a systematic analysis of the efficacy of measures for the prevention of CVD in the population and the objective assessment of their efficacy which would help the governments, city administra-

nizacije i ostala tijela koja su za to nadležna mogla odabrati najprikladnije strategije.

Budući je svakom kliničaru jasno da i najmarljivijim i najkvalitetnijim radom može pomoći tek pojedincima, dok se preventivnim mjerama na razini populacije može pomoći tisućama i stotinama tisuća, ove su preporuke usmjerene upravo u tom pravcu. Na regionalnoj i lokalnoj razini može se, naime, mnogo toga načiniti u školama, prometu i sl., na nacionalnoj razini ministarstva zdravlja i ustanovama koje skrbe o javnom zdravstvu mogu usmjeriti svoje napore upravo ka prevenciji KVB koje su ubojica broj jedan u svim razvijenim zemljama uključujući i Hrvatsku, a na međunarodnoj razini primjerice Svjetska zdravstvena organizacija (WHO), Svjetska trgovačka organizacija (WTO) i Europska unija (EU) također mogu bitno doprinijeti da se pomor i pobol od KVB smanji.

Pritom je ključno na svim tim razinama uspostaviti usku suradnju između političara i zdravstvenih stručnjaka, u konkretnom slučaju kardiologa, ali i udruga bolesnika te ostalih nevladinih udruga iz civilnog sektora. Naime, tek će se takvom suradnjom moći postići ravnoteža između općedržavnog, a time i općedruštvenog interesa za prevencijom i interesa koje zastupa industrija (ne samo ona cigareta već i prehrambena i niz drugih), koji zapravo uz odgovarajuću komunikaciju i suradnju uopće ne trebaju biti suprotstavljeni, iako se takvim čine i u stvarnom životu u pravilu jesu.

Potrebno je, također, naglasiti da će, suprotno proširenim uvjerenjima da medijske kampanje mogu na razini populacije "odraditi" većinu posla u sprječavanju KVB, njihova uloga biti važna samo ako je poduprta i u suglasju s odgovarajućim zakonodavstvom i propisima koji će djelotvorno i konkretnim mjerama poticati zdrav način života, a destimulirati onaj nezdravi⁵.

U nastavku će biti navedene preporuke s naglaskom na to kakvo je sadašnje stanje i što bi valjalo načiniti u Hrvatskoj. Pokušat će se također donekle razobličiti i neki mitovi vezani uz pojedine pristupe mjerama prevencije.

Prehrana

Poznato je da promjena prehrane iz nezdrave u zdravu, posebice unos kuhinjske soli manji od 5 g/dan, unos zasićenih masti i šećera manji od od 10% dnevnog unosa energije i izbjegavanje industrijski proizvedenih transmasnih kiselina, bitno smanjuje rizik za KVB. Procijenjeno je da oporezivanje nezdrave hrane većom poreznom stopom u Velikoj Britaniji može smanjiti smrtnost od KVB za 1,7%⁶. Mnoge su zemlje slijedom tih spoznaja višim stopama oporezovale šećer, masti i slanu hranu⁷. Na žalost, Hrvatska je nedavno krenula upravo suprotnim smjerom. Kada je 1. ožujka 2012. godine povećan PDV sa 23% na 25%, od svih prehrambenih artikala on je, umjesto da bude povećan, čak smanjen baš za ulja, masti i šećer i to na 10%.

U čak 14 država USA postoje porezi na slatka gazirana pića, a upravo objavljeni rezultati jednog velikog istraživanja provedenog na 42.883 muškaraca praćenih prosječno tijekom 22 godine pokazali su da konzumiranje pića koje sadrže šećer povećava rizik koronarne bolesti srca (KBS) za 20%⁸.

Budući da je poznato kako se oko 80% kuhinjske soli unosi polupripređenim i prerađenim namirnicama (posebice kruh, sir, mesni proizvodi i gotova hrana), važno je naglasiti da je dokazano da se zakonskim mjerama, odnosno propisima, uspjelo smanjiti unos soli, najprije u Finskoj s 14 na 9 g/dan, a nakon toga i u mnogim drugim zemljama^{1,9}. Pokazano je

tions, international organizations and other bodies responsible for it to choose the most appropriate strategies.

As every clinician knows, he/she can only help individuals by his/her most diligent and top-quality work, while the preventive measures at a population level can help thousands and hundreds of thousands of persons, so the purpose of these recommendations is obvious. At the regional and local level a lot can be done in schools, traffic, etc., at the national level, the health ministries and institutions that care about public health can focus their efforts on the prevention of CVD which are the number one killer in all developed countries including Croatia, and at the international level the World Health Organization (WHO), World Trade Organization (WTO) and the European Union (EU) can also significantly contribute to reduction of mortality and morbidity from CVD.

It is crucial to establish a close collaboration between politicians and health professionals at all these levels, in this specific case, cardiologists as well as with patient associations and other non-government organizations from the civil sector. In fact, this collaboration will lead to a balance between public healthcare, and thus the general social interest for the prevention and interests represented by the industry (not only the tobacco industry, but also food and many other industries), which actually should not be opposed if they have established an appropriate communication and collaboration, although they may seem to be opposed in real life and very often they really are.

It should be also emphasized that, contrary to widespread belief that the media campaigns can "do" most of the work in preventing CVD at the level of population, their role will be important only if it is supported by and if it is compliant with relevant legislation and regulations that will effectively and with concrete measures encourage a healthy lifestyle and discourage unhealthy lifestyle⁵.

The text that follows contains recommendations focusing on the current situation and actions to be undertaken in Croatia. The intention is also to unmask some myths related to particular approaches to prevention measures.

Food

It is well known that the change from an unhealthy diet to a healthy diet, especially salt intake of less than 5 g/day, the intake of saturated fats and sugar less than 10% of daily energy intake and avoidance of industrial trans fatty acids reduce the risk for CVD. It is estimated that imposing higher taxes on unhealthy food in United Kingdom can reduce CVD mortality by 1.7%⁶. Many countries have imposed higher taxes on sugar, fat and salty food⁷. Unfortunately, Croatia has started introducing opposite measures recently. When on 1 March 2012 VAT increased from 23% to 25%, from all food items the tax on oil, fat and sugar decreased by 10% instead to be increased for such items.

In 14 USA states taxes are imposed on sweet soda drinks, and recently published results of a large study conducted on 42 883 men followed-up over an average of 22 years have shown that sweetened beverage consumption increases the risk of coronary heart disease (CHD) by 20%⁸.

Since it is known that about 80% of salt is taken with semi-processed and processed food (especially bread, cheese, meat products and prepared foods), it is important to emphasize that it has been proven that the legislative measures managed to lead to reduction of salt intake first in Finland from 14 to 9 g/day, and thereafter in many other coun-

da je takav pristup dvadeset puta učinkovitiji nego li pristup koji se temelji na dobrovoljnom smanjenju sadržaja soli u namirnicama uvjerenjem proizvođača hrane da ga samoinicijativno smanje¹⁰. Kako se u Hrvatskoj Program za smanjivanje unosa soli (CRASH) temelji isključivo na uvjeravanju, entuzijazmu sudionika i uopće nije financiran niti od države niti od lokalne uprave ili samouprave, to je tim važnije da se propisima pripomogne smanjenju unosa kuhinjske soli s ciljem prevencije KVB^{11,12}.

Važno je također donijeti i bolje propise o deklariranju sastojaka hrane i pića u kojima bi se moralo obratiti posebnu pozornost obvezi navođenja sadržaja natrija, zasićenih masti, transmasnih kiselina i ostalih sastojaka koji štete kardiovaskularnom zdravlju ako se konzumiraju u pretjeranim količinama. Takvo bi obilježavanje moralo biti jednostavno i jasno laicima kako bi se postigao učinak koji se želi. U tome uzor Hrvatskoj mogu biti zemlje u kojima takav način obilježavanja namirnica već odavno postoji (primjerice obilježavanje semaforom, tj. bojama koje označavaju stupanj opasnosti vezan uz neki od sadržaja namirnice, odnosno upućuju da tog sastojka nema ili ga ima u prihvatljivoj količini)¹³.

Iako su u nizu zemalja donijeti propisi o uklanjanju industrijski proizvedenih transmasnih kiselina iz hrane, odnosno zabrana proizvoda koji te kiseline sadrže u prevelikoj količini (Danska, Švedska, Island, Austrija, Švicarska te gradovi Seattle i New York), zabranjeno je reklamiranje usmjereno prema djeci hrane koja sadrži mnogo masti, soli i šećera na televiziji te zabranjeni aparati za prodaju pića sa šećerom i brze hrane u školama, nema pouzdanih dokaza da li i koliko to utječe na pobol od KVB. S druge je strane već odavno pokazano da uvođenje zdrave hrane u javne kantine i restorane na radnom mjestu ima učinka¹⁴. U nas su 2007. godine načinjeni pozitivni potezi utemeljeni na propisima u svezi s prehranom djece u vrtićima, ali ne i u ostalim prosvjetnim ustanovama ili na radnim mjestima bilo koje vrste pa bi to svakako trebalo učiniti.

Tjelesna aktivnost

Dokazano je da povećanje svakodnevne tjelesne aktivnosti i smanjenje sjedilačkog načina života smanjuje pobol i smrtnost od KVB¹⁵. Međutim, percepcija javnosti o važnosti tjelesne aktivnosti još je uvijek prilično skromna, posebice u Republici Hrvatskoj¹⁶. Preporuke su jasne: trebalo bi redovito, tj. svakodnevno baviti se tjelesnom aktivnošću umjerenog intenziteta (primjerice brzo hodanje) i to najmanje 30 minuta dnevno ili onom jačeg intenziteta (primjerice trčanje) najmanje 25 minuta 3 dana u tjednu ili kombinacijom ova dva oblika tjelesne aktivnosti. Da se to olakša valjalo bi pojednostiniti javni prijevoz, a poskupiti cijenu parkiranja automobila, izgraditi više staza za pješake i bicikliste te dječjih igrališta, jasnim obavijestima poticati ljude na veće korištenje stuba umjesto dizala i pokretnih stepenica, na hodanje ili vožnju biciklom na posao i sl. Posebno je važno poticati tjelesnu aktivnost u onih koji imaju čimbenike rizika za KVB¹⁷. Na žalost, kada je riječ o takvim aktivnostima, one su u Hrvatskoj vrlo skromne i isključivo prepuštene pojedinačnoj odnosno lokalnoj inicijativi pa bi ih stoga valjalo značajno osnažiti, dati im sustavnu potporu na razini države te osigurati njihovo financiranje.

Pušenje

Danas nema nikakvih dvojbi oko toga da smanjenje pušenja ali i izloženosti duhanskom dimu, tj. pasivnom pušenju,

tries¹⁹. It has been shown that this approach is twenty times more efficient than the approach based on voluntary reduction of salt content in foodstuff by convincing food industry to cut down on such content at their own discretion¹⁰. Since the Croatian Action on Salt and Health (CRASH) is based solely on convincing, participants' enthusiasm and is not financed by the government or local authorities or the self-government, it is important that legislative measures help to reduce salt intake aimed at prevention of CVD^{11,12}.

It is also important to introduce legislation on labeling food and drink ingredients where a special emphasis should be placed on the obligation to indicate the content of sodium, saturated fats, trans fatty acids and other ingredients that are harmful for the cardiovascular health if consumed in excessive quantities. Such labeling should be simple and clear to general audience in order to achieve the desired effect. Croatia can follow the countries where such a method of labeling food is already in place (for example marking by using traffic light, schemes or colors that indicate the degree of hazard associated with some of the content of food or suggest that such an ingredient is not present or is present in acceptable amount)¹³.

Although many countries have adopted legislation to remove industrial trans fatty acids from food or banned products containing these acids in excessive amounts (Denmark, Sweden, Iceland, Austria, Switzerland and the cities of Seattle and New York), even though TV commercials advertising junk food containing lots of fat, salt and sugar that target children and vending machines with sweetened beverages and junk food have been banned in schools, there is no reliable evidence of whether and to what extent these actions affect the morbidity from CVD. On the other hand, it has been long known that the introduction of healthy food in public and workplace canteens and restaurants has proved efficient¹⁴. In 2007, some positive actions were taken in Croatia based on the regulations regarding children's nutrition in kindergartens, but not in other educational institutions or workplaces of any kind, whereas such actions should certainly be done.

Physical activity

It has been shown than an increase in daily physical activity and reduction of sedentary lifestyle reduces morbidity and mortality from CVD¹⁵. However, public perception of the importance of physical activity is still fairly modest, especially in Croatia¹⁶. Recommendations are clear: people should do moderate — intensity physical activity (e.g. brisk walking) for at least 30 minutes a day on a regular or a daily basis, or should do a vigorous intensity physical activity (e.g. jogging) for at least 25 minutes three days a week, or a combination of these two types of physical activity. In order to facilitate this, the price of the public transport should be reduced, while parking fees should rise. A greater number of walking and cycling trails and children's playgrounds should be built, good visible notices should be posted encouraging people rather to use stairs than elevators and escalators. Besides people should be encouraged to walk or cycle to work etc. It is especially important to encourage physical activity in those with CVD risk factors¹⁷. Unfortunately, when it comes to such activities, they are very modest in Croatia and are initiated by individuals or local community, whereas such activities should be significantly intensified and supported by the government. Financing should be provided for such activities.

Smoking

smanjuje pobol i smrtnost od KVB. Dokazano je da preporuke o smanjenju izloženosti duhanskom dimu, odvojene prostorije za pušače i poboljšana ventilacija ne smanjuju izloženost dimu cigareta na prihvatljivu razinu¹⁸. S druge je pak strane dokazano da se za svakih 10% povećanja cijene cigareta smanji potrošnja cigareta u zemljama s manjim dohotkom za 8% a u onima sa većim za 4%. Dakle, valjalo bi značajno povećati stopu poreza na cigarete. Pritom su djeca i mladi, koji su zadnjih godina glavna meta promidžbe industrije cigareta, upravo onaj dio populacije koji na takvo povećanje cijena cigareta posebno dobro odgovara i dva do tri puta je veća vjerojatnost da će prestati pušiti kada se cijena cigareta poveća¹⁹. Posebno je važno da zbog povećanja poreza na cigarete većina mladih neće uopće ni početi trajnije pušiti jer će im cigarete naprosto biti preskupe za skromne džeparce koje imaju. U Hrvatskoj, na žalost, ne postoji volja da se značajno poveća stopa poreza na cigarete (iz kojih bi se sredstva onda mogla financirati prevencija raznih bolesti uključujući i KVB) pa bi na tome svakako trebalo raditi.

S druge je pak strane dokazano da populaciju mladih i djece uopće neće zabrinuti uvjeravanje i edukacija o zdravstvenim posljedicama pušenja, pa aktivnosti u tom smjeru neće donijeti mnogo uspjeha. Zabrana prodaje cigareta djeci i mladima te općenito smanjenje dostupnosti cigareta (aparati za prodaju cigareta i sl.) utječe na smanjenje pušenja u mladima. U nas takve zakonske odredbe postoje, ali se zabrana u realnom životu vrlo slabo provodi, a provođenje propisa se praktički uopće ne kontrolira.

Dokazano je da zabrana pušenja na svim javnim mjestima smanjuje izloženost pasivnom pušenju i slijedom toga za otprilike 17% smanjuje pojavu infarkta miokarda²⁰. Da bi stigla veći učinak, upozorenja o pogibelnim posljedicama pušenja na kutijama cigareta moraju biti kombinirana s pakiranjem koje je neatraktivno i jednako za sve vrste cigareta²¹. To, na žalost, do sada nije nigdje provedeno osim nedavno u Australiji.

Što se tiče oglašavanja, istraživanjima je dokazano da potpuna zabrana može dovesti do smanjenja potrošnje cigareta za čak 7%, ali djelomična zabrana oglašavanja nema velikih učinaka²². Zanimljivo je spomenuti da kampanje protiv pušenja usmjerene prema mladeži u školama također nemaju učinke na smanjenje početka pušenja²³. Zabrana pušenja na radnom mjestu, uključujući restorane i kafiće (prvenstveno zbog zaštite zdravlja osoblja koje u njima radi), dovodi do značajnih koristi, a da pritom ne šteti prihodima restorana i kafića^{24,25}. To je posebice važno naglasiti jer je upravo pritisak vlasnika restorana i kafića putem medija uz tvrdnje da će se time značajno naštetiti njihovim prihodima i uopće opstanku te gospodarske grane doveo u Hrvatskoj do povlačenja iz procedure prijedloga zakona kojim se trebalo zabraniti pušenje u takvim lokalima.

Alkohol

Premda je poznato da je konzumiranje malih do umjerenih količina alkohola može čak koristiti u prevenciji nekih KVB, problem je u definiciji "malo do umjerenost". Naime, u realnom životu mnogi piju značajno više no što je "malo i umjerenost", a jasno je dokazano da konzumacija većih količina alkohola povećava smrtnost od KVB²⁶. Upravo se zbog toga i ne preporučuje savjetovati konzumiranje alkohola s ciljem prevencije KVB onima koji ga inače ne piju.

Mnoge zemlje pokušavaju smanjiti pretjerano konzumiranje alkohola koje je veliki zdravstveni problem, ne samo zbog povećanog rizika za KBV već i zbog toga što uzrokuje niz

There is no doubt that reducing smoking and second hand exposure to tobacco smoke or passive smoking reduce morbidity and mortality from CVD. It has been proved that the recommendations on reducing exposure to tobacco smoke, separate rooms for smokers and improved ventilation cannot reduce exposure to cigarette smoke to an acceptable level¹⁸. On the other hand, it has been proved that every 10% of rise in retail prices of cigarettes causes a reduction of cigarette consumption in the countries with low and middle income by 8% and in those with high income the cigarette consumption is reduced by 4%. So, the tax on cigarettes should be considerably increased. Teenagers and young people who have been the main target of the tobacco industry advertising in recent years are particularly sensitive to such increased taxation with two to three times higher probability to quit smoking when the price of cigarettes rises¹⁹. What is more important is that the increase in cigarette taxes will prevent the most of young people to start smoking on a permanent basis, because the cigarettes will simply be too expensive for the modest pocket money they have. In Croatia, unfortunately, there is no will to significantly increase the cigarette taxation (the funds to be generated could be used for financing the prevention of various diseases including CVD), so this issue should be certainly addressed.

On the other hand, it has been proved that adolescents shall not positively respond to education on consequences of smoking to health, so the activities undertaken in this respect will not bring much success. Ban on sale of cigarettes to children and adolescents, and generally reduced availability of cigarettes (cigarette vending machines, etc.) affects the decrease in smoking by young people. In our country such legal provisions exist, but the ban in real life is very poorly enforced, while the enforcement of this legislation is practically not controlled at all.

It has been proven that the ban on smoking in all public places reduces the exposure to secondhand smoking, and consequently it reduces the incidence of myocardial infarction by approximately 17%²⁰. In order to achieve a better effect, the mandatory health pictorial warnings on cigarette pack must be combined with packaging that is unattractive standardized and which looks the same for all types of cigarettes²¹. Unfortunately, this has not been done anywhere except recently in Australia.

As for advertising, the studies have proven that a complete ban could lead to a reduction in cigarette consumption by 7%, but partial ban on advertising has no major effects²². It is interesting to note that anti-smoking campaigns aimed at youth in schools also have no effect on the reduction of starting to smoke²³. The ban on smoking at a workplace, including restaurants and cafes (mainly aimed to protection of health of the personnel working there), leads to significant benefits, while not harming business in restaurants and cafes^{24,25}. This is of a special importance, because lobbying of owners of restaurants and cafes in the media claiming that this ban would significantly jeopardize their revenues and even the survival of that industry caused in Croatia the removal of the bill that should ban smoking in such establishments from the procedure.

Alkohol

Although it is known that consuming small to moderate amounts of alcohol can even be beneficial in prevention of CVD, the problem lies in the definition of "small to moderate". In fact, in real life many drink much more than "small and moderate amounts", and it has been clearly proven that drinking excessive amounts of alcohol increases mortality

drugih bolesti. Povećanje cijene alkoholnih pića zbog visoke stope oporezivanja, zabrana reklamiranja svih alkoholnih pića, dobna granica za prodaju alkoholnih pića i kazne prodavaonicama, restoranima i kafićima koji se toga ne pridržavaju, ograničavanje vrsta prodavaonica koje smiju prodavati alkoholna pića te niska granica alkohola u krvi vozača, sve su to mjere kojima se dokazano može smanjiti konzumiranje alkohola, o čemu postoji obilna literatura¹. Na žalost, dokazano je da edukacija o štetnosti alkohola po zdravlje u školama nema nikakvog učinka²⁷. U nas je alkohol cijenom dostupan širokom krugu potrošača uključujući djecu i mladež, u mnogim je krajevima Hrvatske konzumiranje većih količina alkohola kulturološki i društveno prihvatljivo, a propisi o zabrani prodavanja alkohola djeci i mladeži u stvarnom se životu ne provode te nema ni pravog nadzora njihovog provođenja. Stoga bi se u tom području moglo i moralo dosta toga načiniti.

Psihčki stres i socijalna deprivacija

Iako se već odavno zna da smanjenje kroničnog stresa može smanjiti rizik za KVB, osim preporuka o reorganizaciji posla slijedom koje bi svatko na poslu (kad je to ikako moguće) imao svoju privatnost i mogućnost izbora načina obavljanja svog posla, nema pozdanih objektivnih podataka o koristi bilo kojeg oblika intervencije u tom području na smanjenje rizika²⁸. Dobro je poznato da su socijalna nesigurnost i deprivacija, niska razina obrazovanja, nezaposlanost i strah od gubitka posla čimbenici koji povećavaju rizik od KVB. Međutim, to su ujedno i stanja na koja je najteže utjecati jer su povezana s gospodarskim i inim okolnostima, ali je način utjecaja na njih upravo u području globalne odnosno državne politike, a ne zdravstva. Ozračje koje s time u svezi vlada danas u Hrvatskoj sigurno nije povoljno.

Onečišćenje zraka

Postoji niz podataka koji upućuju da onečišćenje zraka utječe ne samo na pojavu plućnih bolesti, već i na bolesti srca. Procjenjuje se da bi se smanjenjem zagađenosti zraka, i to ne samo onog uzrokovanog s CO₂ već i ostalim polutantima, kao što su NOX, čađa i sl., mogla značajno smanjiti smrtnost od karcinoma pluća, ali i od kardiopulmonarnih bolesti²⁹. Ljudi u gradovima su, zbog onečišćenja zraka, skloniji KVB, a razlika od 10 µg/m³ povećava rizik od infarkta miokarda za 21%. Stoga bi se mjerama kao što su poticanje dolaska na posao javnim prijevozom ili biciklom odnosno pješke (ako je to moguće) umjesto osobnim automobilima i sl. trebalo pokušati smanjiti onečišćenje zraka. Neke se od tih mjera u Hrvatskoj provode ali sporadično i isključivo vezano uz aktivnost lokalne uprave i samouprave pa bi ih trebalo sustavno potaknuti i podržati.

Zaključak

Mjere koje se poduzimaju u području zdravstva i koje su u kompetenciji i mogućnosti djelovanja zdravstvenih djelatnika, posebice kardiologa, nisu dostatne da se značajnije smanje rizici pobola i smrtnosti od KVB. Stoga je nužno poduzimati mjere na razini čitave populacije. Osim toga, samo se na toj razini može suprotstaviti bilo javnim (medijskim reklamiranjem) bilo prikrivenim (a ti su u pravilu još snažniji) utjecajima industrije — prehrambene, cigareta, alkohola i sl. Iako se na prvi pogled čini da neke od navedenih mjera zahtijevaju ulaganje značajnih sredstava, nizom istraživanja ja-

from CVD²⁶. In fact, this is the reason why it is not recommended to advise those who would not otherwise drink alcohol to drink it with the purpose of preventing CVD.

Many countries are trying to reduce the excessive consumption of alcohol, which is a major health problem, not only because of the increased CVD risk, but also because it causes a number of other diseases. Prices of alcoholic drinks that rose as a result of high tax rates, ban on advertising of all alcoholic drinks, the age limit for selling alcoholic drinks and fines imposed on stores, restaurants and cafes that do not follow the regulations for selling alcohol, limitation of types of stores that may sell alcoholic drinks and low limit of alcohol allowed in the blood of drivers are all the measures that are proven to reduce the alcohol consumption which are all based upon huge literature¹. Unfortunately, it has been proven that the education on harmful effect of alcohol in schools has no effect²⁷. In our country alcohol is inexpensive which is why a wide range of consumers, including children and young people can afford it and in many parts of Croatia drinking large amounts of alcohol is culturally and socially acceptable, while the legislation on the ban of selling alcohol to children and young people in real life are not enforced and there is no real control of enforcement of such legislation. Therefore, a lot should be done in this segment.

Mental stress and social deprivation

Although it has been long known that influencing chronic stress may reduce the CVD risk, apart from the recommendations on the reorganization of work where everyone (when possible) would have his/her privacy at work and an opportunity to choose methods of doing his/her job, there is no reliable data on the benefits of any form of intervention in this area that may lead to reduction of the risk²⁸. It is well known that social insecurity and deprivation, low education, unemployment and fear of job loss are the factors that increase the CVD risk. However, these are also the conditions that are very hard to be influenced, because they are associated with economic and other circumstances, but they can be impacted by global or national policies, not by the medical profession. The atmosphere concerning this in Croatia is clearly not favourable.

Air pollution

There is a number of data indicating that air pollution affects not only the occurrence of lung disease, but also the CVD. It is estimated that a reduction in air pollution, not only that caused by CO₂ but also by other pollutants, such as NOX, particulate matter, etc., could significantly reduce mortality not only from lung cancer, but also from cardiopulmonary disease²⁹. Population in cities is more prone to CVD as a consequence of air pollution, while the difference of 10 µg/m³ increases the risk of myocardial infarction by 21%. Therefore, measures such as encouragement to commute to a place of work by public transport or by bicycle or on foot (if possible) instead of driving a car, etc. should be aimed at reduction of air pollution. Some of these measures are implemented in Croatia, but this is a sporadic process exclusively related to the activities undertaken by the local authorities and self-government, but which should be systematically encouraged and supported by the government.

sno je dokazano da su one itekako isplative i to ne samo u smislu očuvanja zdravlja i spašavanja velikog broja života, već i u izravno financijskom smislu^{30,31}. Nažalost, Hrvatska spada u zemlje u kojima se te mjere provode ili u vrlo skromnom opsegu ili isključivo zahvaljujući poduzetnosti pojedinih lokalnih vlasti pa se upravo u tom području u nas otvaraju široke mogućnosti intervencije.

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Conclusion

Measures which can be taken by health professionals, especially by cardiologists, are not sufficient to significantly reduce the risks of morbidity and mortality from CVD. Therefore, the measures are to be taken at the level of the whole population. Besides, only at that level we can combat any public (advertising in media) or concealed (and these are usually more influential) industrial influence — by food, cigarette, alcohol etc. industry. Although at a first glance it seems that some of these measures require significant financial sources, a number of studies have clearly demonstrated that they are very cost effective, not only in terms of health protection and saving a large number of lives, but also directly financially^{30,31}. Unfortunately, Croatia is among the countries where these measures are implemented either to a very modest extent or exclusively owing to an active engagement of local authorities, so great possibilities for intervention are still open.

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