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## Možemo li govoriti o regionalnosti čimbenika rizika za kardiovaskularnu bolest u hospitaliziranih koronarnih bolesnika

## Can we speak of regional risk factors for cardiovascular disease in hospitalized coronary patients

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Poznato je da je dostupno relativno malo podataka u literaturi o pojavnosti i razlikama u čimbenicima rizika kod koronarnih bolesnika u odnosu na njihov zemljopisni položaj. Pretpostavka jest da bi značajne razlike trebale postojati, međutim one uglavnom nisu dovoljno istražene, a to se posebice odnosi na zemljopisna područja s velikim razlikama između kontinentalnog i mediteranskog dijela.

Povijest, klima i zemljopisni oblik Republike Hrvatske predstavljaju izvrstan primjer zemlje u kojoj bi se trebale pokazati značajne razlike populacijama hospitaliziranih koronarnih bolesnika između kontinentalnog i mediteranskog dijela, ukoliko one postoje. Iako je posljednjih godina u Republici Hrvatskoj provedeno više istraživanja (EH-UH studija, TASPIC-CRO studija, CAHS 2003 i SHS 2004), koja su pokazala veliku prevalenciju čimbenika rizika za koronarnu bolest, nažalost ista su ostavila veći broj neodgovorenih pitanja.

It is known that relatively little information is available in literature on the differences in risk factors with coronary patients with respect to their geographical location. The presumption is that significant differences should exist, however they have been mainly insufficiently researched, and which therefore relates especially to geographical locations with large variances between continental and Mediterranean regions.

The history, climate and geographical shape of the Republic of Croatia represents an excellent example of a country where there should be present significant differences in populations of hospitalized coronary patients between continental and Mediterranean regions, inasmuch as they exist. Although in the last few years a number of studies have been undertaken in the Republic of Croatia (EH-UH study, TASPIC-CRO study, CAHS 2003 and SHS 2004), which have shown a large prevalence of risk factors in coronary illness, unfortunately such research has resulted in even a larger number of unanswered questions.



U proljeće 2006. godine istraživačka skupina pod vodstvom prof. dr. sc. Mije Bergovca iz Zavoda za bolesti srca i krvnih žila Klinike za unutarnje bolesti Medicinskog fakulteta Sveučilišta u Zagrebu u KB Dubrava predložila je Ministarstvu znanosti, obrazovanja i športa Republike Hrvatske provođenje projekta praćenja bolesnika u bolničkoj populaciji sa čimbenicima rizika za razvoj akutne i/ili kronične koronarne bolesti srca pod nazivom "Regionalna distribucija čimbenika rizika u hospitaliziranih koronarnih bolesnika". Projekt je bio zamišljen tako da bude reprezentativan po udjelu u pojedinim regijama Republike Hrvatske za populaciju hospitaliziranih bolesnika radi koronarne bolesti srca, te je krajem početkom 2007. godine i odobren za provođenje. Voditelj projekta je prof. dr. sc. Mijo Bergovec, a sam projekt je dio programa projekata pod vodstvom prof. dr. sc. Mije Bergovca pod nazivom "Regionalnost, dinamika srčanožilnih čimbenika rizika i zdravstvene intervencije" čiji je glavni cilj otkriti klasterne čimbenika rizika za koronarnu bolest karakteristične za pojedine regije i populacijske skupine. S radom na projektu se započelo u ljeto 2007. godine, te su u projekt uključeni bolesnici iz kontinentalnog i mediteranskog dijela Republike Hrvatske, svaki od 13 istraživačkih centara treba uključiti 180 bolesnika do kolovoza 2008. godine.

Iz kontinentalnog dijela sudjeluju istraživački timovi i bolesnici hospitalizirani u dvije bolnice u Zagrebu (Klinička bolnica Dubrava — prof. dr. sc. Mijo Bergovec, mr. sc. Miroslav Raguž, dr. sc. Boris Starčević, mr. sc. Jozica Šikić Vagić, dr. Hrvoje Vražić i dr. Mario Udovičić; te Opća bolnica Sv. Duh — prof. dr. sc. Jure Mirat i prim. mr. sc. Dragutin Tomičić), zatim u šest bolnica iz područja kontinentalnog dijela (Opća bolnica Slavonski Brod — dr. Pejo Samardžić, Opća bolnica Bjelovar — prim. dr. sc. Mario Ivanuš, Opća bolnica Koprivnica — dr. Krešimir Šutalo, Opća bolnica Čakovec — dr. Branko Ostrički, Opća bolnica Karlovac — dr. Janko Grman, Opća bolnica Varaždin — dr. Dubravko Tršinski, dr. Krunoslav Koščak, dr. Melita Jerić i dr. Siniša Car) te istraživački tim iz Zagreba u Poliklinici za prevenciju kardiovaskularnih bolesti i rehabilitaciju — mr. sc. Mirjana Jembrek-Gostović i prim. dr. sc. Inge Heim.

Iz mediteranskog/priobalnog dijela sudjeluju istraživački timovi i bolesnici hospitalizirani u četiri bolnice iz područja priobalne Hrvatske (Opća bolnica Pula — mr. sc. Nediljko Jukić, Klinički bolnički centar Rijeka — prof. dr. sc. Luka Zaputović i dr. Marjan Padovan, Klinički bolnički centar Split — prof. dr. sc. Stojan Polić i mr. sc. Ajvor Lukin, Opća bolnica Dubrovnik — dr. Antica Romić, te Opća bolnica Zadar — prim. dr. sc. Albino Jović, dr. Davor Nekić i prim. dr. sc. Aleksandar Knežević).

Projekt će trajati pet godina, glavni cilj je otkrivanje rasprostranjenosti čimbenika rizika za razvoj akutne i/ili kronične koronarne bolesti srca u uzorku bolničke populacije. Ispitat će se razlike između kontinentalnih i priobalnih populacija takvih bolesnika, te njihovo praćenje kroz četiri godine (preživljenje, komplikacije i broj ponovnih hospitalizacija). Drugi cilj je u četvrtoj godini uz uključivanje novog uzorka bolničke populacije uočiti eventualni trend promjene tih čimbenika rizika u populaciji bolesnika u odnosu na stanje prije četiri godine.

In spring of 2006, a research group led by Prof. Mijo Bergovec Ph.D. from the Institute of Heart and Blood Vessel Diseases, Clinic for Internal Diseases at the Clinical Hospital Dubrava, recommended to the Ministry of Science, Education and Sports of the Republic of Croatia an implementation of a project relating to monitoring of patients in the hospital population possessing risk factors for developing acute and/or chronic coronary heart disease entitled "Regional Distribution of Risk Factors in Hospitalized Coronary Patients". The project was designed to be representative based on parts of the regions in the Republic of Croatia for the population of hospitalized patients relating to coronary heart disease, and at the end of 2007, its implementation was approved. The project chief was Prof. Mijo Bergovec Ph.D., while the project itself was part of the project program run by Prof. Mijo Bergovec Ph.D. titled "Regionalism and Dynamics of Cardiac and Coronary Risk Factors and Medical Intervention", whose main aim was to discover the risk factor clusters for coronary disease characteristic for the particular regions and population groups. Work on the project began in Summer 2007, with the project including patients from the continental and Mediterranean part of the Republic of Croatia, and each of the 13 research centres having to include 180 patients by August 2008.

Participation from the continental areas include research teams and patients hospitalized in the two hospitals in Zagreb (Clinical Hospital Dubrava — Prof. Mijo Bergovec Ph.D., Miroslav Raguž M.Sc., Boris Starčević Ph.D., Jozica Šikić Vagić M.Sc., Hrvoje Vražić M.D. and Mario Udovičić M.D.; and the General Hospital Sv. Duh - Prof. Jure Mirat Ph.D. and Prim. Dragutin Tomičić M.Sc.), followed by six hospitals from the continental region (Slavonski Brod General Hospital — Pejo Samardžić M.D., Bjelovar General Hospital — Prim. Mario Ivanuš Ph.D., Koprivnica General Hospital — Krešimir Šutalo M.D., Čakovec General Hospital — Branko Ostrički M.D., Karlovac General Hospital — Janko Grman M.D., Varaždin General Hospital — Dubravko Tršinski M.D., Krunoslav Koščak M.D., Melita Jerić M.D. and Siniša Car M.D.) and the research team from Zagreb in the Polyclinic for the prevention of cardiovascular diseases and rehabilitation — Mirjana Jembrek-Gostović M.Sc. and Prim. Inge Heim Ph.D.

Participation from the Mediterranean/coastal region included research teams and patients hospitalized in four hospitals from the coastal region of Croatia (Pula General Hospital — Nediljko Jukić M.Sc., Rijeka Clinical Hospital Center — Prof. Luka Zaputović Ph.D. and Marjan Padovan M.D., Split Clinical Hospital Center — Prof. Stojan Polić Ph.D. and Ajvor Lukin M.Sc., Dubrovnik General Hospital — Antica Romić M.D., and Zadar General Hospital — Prim. Albino Jović Ph.D., Davor Nekić M.D. and Prim. Aleksandar Knežević Ph.D.).

The project will cover the duration of 5 years, with the main aim of discovering the prevalence of risk factors in the development of acute and/or chronic coronary heart disease in hospital population surveys. The variances between the continental and coastal patient populations will also be researched, as well as their monitoring through a period of 4 years (survivors, complications and number of repeated hospitalizations). The other aim in the fourth year





Pretpostavka i očekivanje istraživača jest da će se na rezultatima projekta moći graditi racionalniji dijagnostički i terapijski pristup bolesnicima s akutnom i/ili kroničnom koronarnom bolešću srca u budućnosti, što može imati veliko nacionalno i regionalno značenje.

Od samog početka provođenja projekta jednom mjesečno svi istraživački centri šalju podatke o uključenim bolesnicima, te se svaki mjesec šalje mjesečno izvješće svim istraživačima u tiskanom i elektroničkom obliku, koje uključuje podatke o napretku projekta, no i odgovore na pitanja koja istraživači postavljaju, odgovore na nejasnoće u ispunjavanju upitnika i sl. Izvješće za veljaču je još u izradi, no svejedno objavljujemo tablicu sa prikazanim napretkom kao primjer dijela izvješća.

Iako uključivanje bolesnika teče nešto sporije od očekivanog, nadamo se da ćemo uspjeti ispuniti zacrtane planove. Veliko hvala svim istraživačima na dobroj volji, trudu i vremenu uloženom u ispunjavanje upitnika i uključivanje bolesnika!

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is to include a new survey of hospital population and monitor the eventual trends in changes to such risk factors in the patient population with respect to their state 4 years earlier.

The presumption and expectations of the research is that the project results will provide a basis for constructing a more rational diagnostic and therapeutic approach to patients with acute and/or chronic coronary heart diseases in the future, which may be important in the national and regional sense.

Since the very beginning of project implementation, once a month all researcher centres send information relating to surveyed patients, and each month reports are sent to all researchers in printed and electronic format, which includes information of the project progress, as well as answers to questions posed by researchers, answers to ambiguities in completing the survey and so on. The report for February is still being compiled, however, we have published a table showing progress as an example for part of the report.

Even inclusion of patients is occurring somewhat slower than anticipated, we hope to succeed in fulfilling the required plans. A great thanks to all researchers for their good will, endeavours and time spent in filling out the survey and including patients!

Institution	Date of last change of state	Number of included examinees	% of total number of those surveyed that is required to be gathered in the institutions (180 examinees)
Dubrava, Zagreb Clinical Hospital	2008-02-22	110	61.11
Sv. Duh, Zagreb General Hospital	2007-10-19	0	0.00
Bjelovar General Hospital	2008-02-22	2	1.11
Čakovec General Hospital	2007-12-24	15	8.33
Karlovac General Hospital	2007-11-23	13	7.22
Koprivnica General Hospital	2008-02-22	8	4.44
Slavonski Brod General Hospital	2008-02-22	35	19.44
Split Clinical Hospital Centre	2007-11-22	0	0.00
Rijeka Clinical Hospital Centre	2008-02-22	22	12.22
Dubrovnik General Hospital	2008-02-22	42	23.33
Pula General Hospital	2008-01-22	50	27.78
Varaždin General Hospital	2008-02-22	26	14.44
Zadar General Hospital	2008-02-22	8	4.44
<b>Total:</b>		<b>331</b>	<b>14.15</b>