



Cardiovascular prevention in the Czech Republic

Update by the Working Group on Cardiovascular Prevention of the Czech Society of Cardiology

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1) Baseline information about the Czech Republic

The Czech Republic, also known as Czechia is a central European country with a population of 10 610 947 (September 2017) with an area of 78,866 km². GDP estimate for 2018 is \$368.659 billion i.e. \$36,784 per capita (39th ranking country worldwide). The country is member of the European Union, NATO and other international organizations. Until 1993 the country was part of Czechoslovakia and till 1989 ruled by a communist regime. Nowadays the Czech Republic is a country with an European social model, universal healthcare system (with minimal co-payment by patients for medical services) and a tuition-free university education. The UNDP ranks the country 14th in inequality-adjusted human development.

2) Structure of Healthcare

According to the 2016 Euro health consumer index the Czech health system is the 13th most successful in Europe. It is based on a compulsory insurance model, with fee-for-service care funded by mandatory employment-related insurance plans since 1992

The financing is based on multiple sources with major share of public health insurance. Healthcare is funded from public health insurance, direct payments, the national and regional budgets. The system aims to create conditions with no differences in the availability and quality of healthcare for all citizens.

The system is composed on extensive outpatient case, institutional care including public (state-owned) hospitals (including large University Hospitals), regional and district hospitals (private or community-owned); highly accessible ambulance and emergency rescue service, balneological care and long-term care institutions.

3) Trends in cardiovascular morbidity and mortality in Czech republic

Assoc Prof. Jan Bruthans, PhD

In 1991 started a pronounced and continuous decrease of CV mortality in men and a decrease in female CV mortality restarted and accelerated. This trend continues until now and was basically equal in men as in women (2016: standardized CV mortality men: 334.5/100 000, 40% of total stand. mortality, women: 212.8/100 000, 43% of total stand. mortality). The decrease was more pronounced in cerebrovascular mortality (previously about 30%, now only about 17% of total stand. CV mortality) than in CHD mortality, where the decrease was about 50% (2016: standardized CHD mortality men: 220.5/100 000, women: 97.9/100 000). The decrease of CHD mortality was mainly due to continuously decreasing mortality of acute CHD (AMI), this, in major part, due to decreasing fatality of AMI, in minor part due to decreasing incidence of AMI. The decrease in chronic CHD mortality stopped after 2000 and started to increase again in following years.

CV mortality of men and women up to 64 years of age decreased more rapidly than in older persons. So, the previously extremely high CV mortality of middle aged men decreased considerably. Persons with basic education continue to have higher CV mortality than persons with middle and university education. Also, regional differences in CV mortality persist, it is lowest in Prague and in other large towns with university medical facilities, highest in Northern Bohemia and Northern Moravia regions. There is a very close correlation between regional male unemployment rate and CV mortality.

Trends in CV morbidity were similar, though less pronounced, as trends in CV mortality. The total number of hospitalizations for CV diseases started to decrease in 1996, but the decrease of hospital admissions for AMI was only modest and number of hospital admissions for heart failure and arrhythmias increased continuously. The age and co-morbidities of cardiovascular patients increase, as well as there is an increase in long term course of CV disease.

Table 1: Standardized mortality in Czech Republic 1958 - 2016

Men	1985	2016	△ %
Total mortality	1580.8	828.5	- 47.6
CV mortality (IX)	844.2	334.5	- 60.4
CHD (I20-25)	436.0	220.5	- 49.4
Cerebrov.dis.(I60-69)	250.2	55.4	- 77.9
Women			
Total mortality	944.4	496	- 47.5
CV mortality (IX)	547.9	212.8	- 61.2
CHD (I20-25)	222.6	97.9	- 56.0
Cerebrov.dis.(I60-69)	202.1	42.2	- 79.1



Figure 1: Hospital Admissions for Cardiovascular Causes 1986 - 2011

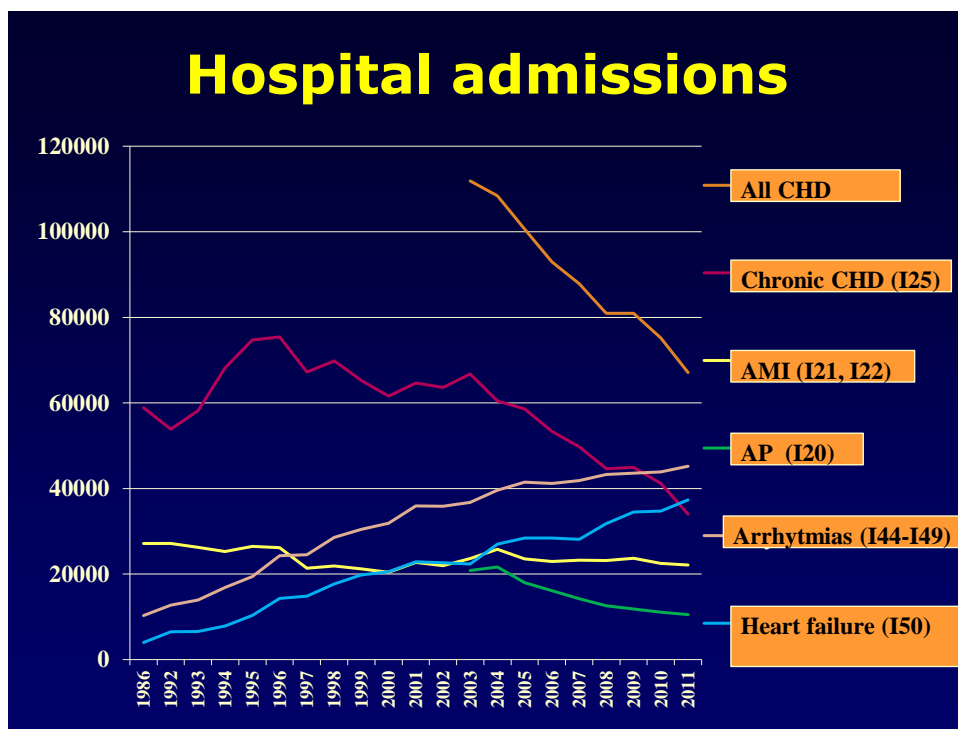
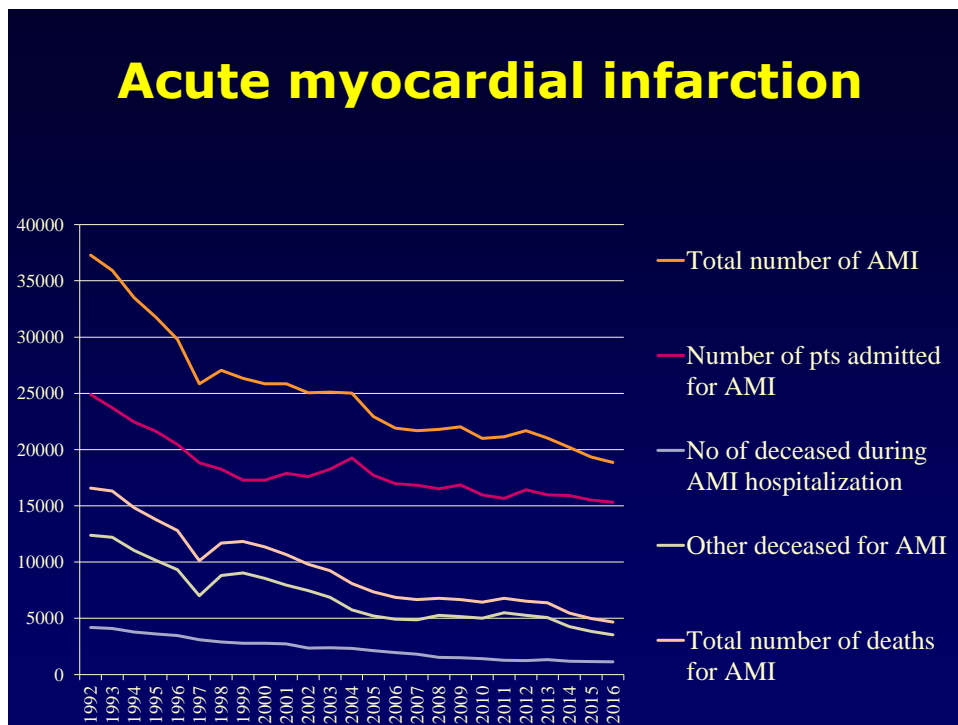


Figure 2: Incidence of Acute Myocardial Infarction 1992-2016





4) Prevalence and trends in risk factors

Prof. Renata Cífková, MD, PhD

The Czech Republic is one of the few European countries having longitudinal trends in major cardiovascular risk factors assessed in representative population samples since 1985.

Methods

The first three cross-sectional surveys (1985, 1988, and 1992) were organized within the WHO MONICA Project in six, mostly rural, districts. In 1997/98, 2000/01, and 2007/08, another three surveys were performed in the six original MONICA districts as part of the Czech post-MONICA study.

In all districts, a 1% percent population random sample aged 25–64 years was selected.

All lipid analyses were performed in the Lipid Laboratory of the Institute for Clinical and Experimental Medicine (Prague) serving as the WHO Reference Laboratory throughout the WHO MONICA project.

Results

Population sample characteristics and response rates

The total number of participants in all six independent cross-sectional surveys was 13,972, with a slightly higher response rate in women (*Table 2*). There was a significant downward linear trend in the response rate in both sexes; however, it never fell below 60%. The proportion of individuals aged 25–34 years decreased significantly over the period of 22/23 years.

Trends in major CVD risk factors

There was a significant upward trend in height in both genders, whereas body weight increased only in males between 1985 and 2007/8 (*Table 3*). The increase in body weight in males is alarming (from 81.7 ± 12.8 to 90.0 ± 15.8 kg; $P < 0.001$). BMI increased significantly only in males.

Cigarette smoking declined significantly, by 14.5% (from 45.0 to 30.5%) in males between 1985 and 2007/8 whereas there was no change in the proportion of female smokers over the analyzed period (*Figure 1*). The overall mean of 23.9% indicates a very high proportion of female smokers.

There was a downward trend in SBP and DBP in both genders with a greater decline in the female population (males: from $135.8 \pm 19.2/85.9 \pm 11.0$ to $132.5 \pm 17.2/84.4 \pm 10.1$ mmHg; $P < 0.001$; females: from $131.6 \pm 20.9/82.5 \pm 11.3$ to $126.6 \pm 19.2/80.6 \pm 9.6$ mmHg; $P < 0.001$) (*Table 4*). The decrease in BP was greater in females.

Over the period of 22/23 years, there was a decline in the prevalence of hypertension in the total population (data not shown in table) and in females (total population: from 47.1 in 1985 to 43.6% in 2007/8; $P < 0.001$; females: from 42.5 in 1985 to 37.3% in 2007/8; $P < 0.001$) while not changing in the



male population. Awareness of hypertension increased in both genders and was always higher in females (males: from 41.4 in 1985 to 68.4% in 2007/8; $P < 0.001$; females: from 58.9 in 1985 to 71.4% in 2007/8; $P < 0.001$). The number of individuals on antihypertensive medication increased significantly in both sexes, again showing consistently higher rates among females (males: from 21.1 to 58.2%; $P < 0.001$; females: from 38.9 to 58.9%; $P < 0.001$). Hypertension control increased significantly over the period of 22/23 years (from 3.9 to 24.6%; $P < 0.001$), again showing consistently more effective control of hypertension in females.

Over the period of 22/23 years, there was a significant downward trend for total cholesterol in both genders (males: from 6.21 ± 1.29 to 5.29 ± 1.10 ; $P < 0.001$; females: from 6.18 ± 1.26 to 5.30 ± 1.06 mmol/L; $P < 0.001$) (Table 5). Within the same period, there was also a mild decline in HDL-cholesterol in males (from 1.35 ± 0.36 to 1.30 ± 0.34 mmol/L; $P < 0.001$) and no change in females. There was also a significant decrease in non-HDL-cholesterol (males: from 4.86 ± 1.33 to 3.97 ± 1.10 ; $P < 0.001$; females: 4.61 ± 1.29 to 3.65 ± 1.12 mmol/L; $P < 0.001$) and in the total to HDL-cholesterol ratio (males: from 4.94 ± 1.83 to 4.32 ± 1.39 ; $P < 0.001$; females: from 4.14 ± 1.32 to 3.42 ± 1.15 ; $P < 0.001$) in both genders.

Based on the validated IMPACT mortality model, more than half of the very substantial fall in CHD mortality in the Czech Republic between 1985 and 2007 was attributable to reduction in major cardiovascular risk factors. Improvement in treatments accounted for approximately 43% of the total mortality decrease. These findings emphasize the value of primary prevention and evidence-based medical treatment.

**Table 2 Survey sample sizes and response rates**

	1985	1988	1992	1997/98	2000/01	2007/08	P for trend
Total	2,570	2,768	2,343	1,990	2,055	2,246	
Mean age, yrs	44.9 ± 11.38	45.1 ± 11.26	44.7 ± 10.87	45.6 ± 10.64	46.2 ± 11.9	47.1 ± 11.46	<0.001
Men	1,253	1,357	1,134	969	1,003	1,102	
Mean age, yrs	45.0 ± 11.39	45.3 ± 11.29	44.6 ± 10.76	45.8 ± 10.63	46.7 ± 11.07	47.9 ± 11.65	<0.001
Response rate (%)	81.5	85.5	73.2	63.2	62.0	62.1	<0.001
Age group, n (%)							
25–34	307 (24.5)	322 (23.7)	246 (21.7)	194 (20.0)	187 (18.6)	208 (18.9)	<0.01
35–44	296 (23.6)	323 (23.8)	350 (30.9)	230 (23.7)	230 (22.9)	251 (22.8)	ns
45–54	334 (26.7)	361 (26.6)	310 (27.3)	332 (34.3)	295 (29.4)	231 (21.0)	ns
55–64	316 (25.2)	351 (25.9)	228 (20.1)	213 (22.0)	291 (29.0)	412 (37.4)	ns
Women	1,317	1,411	1,209	1,021	1,052	1,144	
Mean age, yrs	44.9 ± 11.38	44.9 ± 11.24	44.9 ± 10.97	45.3 ± 10.65	45.8 ± 11.10	46.4 ± 11.23	<0.001
Response rate (%)	85.0	88.4	76.7	66.4	63.8	63.1	<0.001
Age group, n (%)							
25–34	322 (24.4)	342 (24.2)	266 (22.0)	212 (20.8)	213 (20.2)	235 (20.5)	<0.05
35–44	340 (25.8)	369 (26.2)	356 (29.4)	266 (26.1)	276 (26.2)	284 (24.8)	ns
45–54	343 (26.0)	360 (25.5)	311 (25.7)	326 (31.9)	285 (27.1)	299 (26.1)	ns
55–64	312 (23.7)	340 (24.1)	276 (22.8)	217 (21.3)	278 (26.4)	326 (28.5)	ns

**Table 3 Anthropometric parameters between 1985 and 2007/08 in six districts of the Czech Republic**

	1985	1988	1992	1997/8	2000/1	2007/8	P for trend
Males							
Height, cm	173.8 ± 6.8	174.3 ± 7.0	174.8 ± 7.1	175.6 ± 7.1	175.3 ± 7.0	177.6 ± 7.0	0.001
Body weight, kg	81.7 ± 12.8	84.2 ± 12.8	82.8 ± 12.8	84.8 ± 13.1	86.5 ± 14.6	90.0 ± 15.8	0.001
BMI, kg/m ²	27.0 ± 4.0	27.7 ± 3.8	27.1 ± 3.8	27.5 ± 3.8	28.1 ± 4.4	28.5 ± 4.6	0.001
BMI ≥ 30, kg/m ² (%)	246 (19.7)	343 (25.3)	225 (19.9)	244 (25.2)	295 (29.5)	370 (33.6)	0.001
Females							
Height, cm	161.2 ± 6.3	161.5 ± 6.4	162.2 ± 6.4	162.5 ± 6.4	162.7 ± 6.3	164.6 ± 6.4	0.001
Body weight, kg	70.8 ± 13.6	72.1 ± 13.8	70.7 ± 13.9	71.5 ± 14.2	72.1 ± 15.0	74.1 ± 16.2	ns
BMI, kg/m ²	27.3 ± 5.4	27.7 ± 5.4	26.9 ± 5.3	27.1 ± 5.5	27.3 ± 5.7	27.3 ± 5.7	ns
BMI ≥ 30, kg/m ² (%)	367 (28.0)	423 (30.0)	308 (25.5)	270 (26.5)	292 (27.8)	344 (28.1)	ns

BMI, body mass index

**Table 4 Blood pressure (mean \pm SD), prevalence, awareness, treatment, and control of hypertension between 1985 and 2007/08 in six districts of the Czech Republic**

	1985	1988	1992	1997/8	2000/1	2007/8	P for trend
Males							
SBP, mmHg	135.8 \pm 19.2	134.9 \pm 19.2	134.2 \pm 20.0	132.3 \pm 16.9	131.9 \pm 16.8	132.5 \pm 17.29	0.001
DBP, mmHg	85.9 \pm 11.0	84.4 \pm 11.0	86.1 \pm 11.4	84.5 \pm 10.0	83.7 \pm 9.7	84.4 \pm 10.1	0.001
Prevalence of HT, %	650 (51.9)	639 (47.1)	508 (44.8)	408 (42.1)	457 (45.6)	553 (50.2)	ns
Awareness of HT, %	269 (41.4)	320 (50.1)	232 (45.7)	230 (56.4)	284 (62.1)	378 (68.4)	0.001
Medication for HT, %	137 (21.1)	197 (30.8)	123 (24.2)	151 (37.0)	191 (41.8)	322 (58.2)	0.001
Control of HT, %	18 (2.8)	33 (5.2)	14 (2.8)	50 (12.3)	60 (13.1)	135 (24.4)	0.001
Females							
SBP, mmHg	131.6 \pm 20.9	130.7 \pm 20.9	130.2 \pm 22.0	125.2 \pm 18.1	125.9 \pm 18.8	126.7 \pm 19.2	0.001
DBP, mmHg	82.5 \pm 11.3	81.4 \pm 11.2	82.5 \pm 12.1	79.3 \pm 9.8	79.3 \pm 9.8	80.6 \pm 9.6	0.001
Prevalence of HT, %	560 (42.5)	552 (39.1)	460 (38.0)	323 (31.6)	347 (33.0)	426 (37.3)	0.001
Awareness of HT, %	330 (58.9)	330 (59.8)	255 (55.4)	221 (68.4)	256 (73.8)	304 (71.4)	0.001
Medication for HT, %	218 (38.9)	233 (42.2)	159 (34.6)	187 (57.9)	205 (59.1)	251 (58.9)	0.001
Control of HT, %	29 (5.2)	51 (9.2)	28 (6.1)	70 (21.7)	77 (22.2)	106 (24.9)	0.001

p = statistical significance for linear trend

SBP, systolic blood pressure, DBP, diastolic blood pressure, HT, hypertension

**Table 5 Lipid parameters between 1985 and 2007/8 in six districts of the Czech Republic**

	1985	1988	1992	1997/8	2000/1	2007/8	P for trend
Males							
TC, mmol/L	6.21 ± 1.29	6.29 ± 1.21	5.98 ± 1.30	5.65 ± 1.15	5.88 ± 1.08	5.29 ± 1.10	0.001
HDL-C, mmol/L	1.35 ± 0.36	1.33 ± 0.32	1.34 ± 0.49	1.28 ± 0.32	1.25 ± 0.33	1.30 ± 0.34	0.001
Non HDL-C, mmol/L	4.86 ± 1.35	4.96 ± 1.26	4.65 ± 1.33	4.36 ± 1.16	4.63 ± 1.11	3.97 ± 1.10	0.001
TC/HDL-C	4.94 ± 1.83	5.01 ± 1.65	4.83 ± 1.66	4.66 ± 1.46	5.01 ± 1.53	4.32 ± 1.39	0.001
Dyslipidemia*, % (N/T)*	87.5 (1,093/ 1,249)	89.3 (1,208/ 1,352)	83.5 (945/ 1,132)	77.6 (751/ 968)	85.0 (853/ 1,003)	73.8 (804/ 1,089)	0.001
Females							
TC, mmol/L	6.18 ± 1.26	6.22 ± 1.21	5.95 ± 1.29	5.53 ± 1.21	5.82 ± 1.13	5.30 ± 1.06	0.001
HDL-C, mmol/L	1.57 ± 0.36	1.56 ± 0.34	1.53 ± 0.46	1.50 ± 0.36	1.49 ± 0.38	1.64 ± 0.38	ns
Non HDL-C, mmol/L	4.61 ± 1.29	4.66 ± 1.25	4.44 ± 1.32	4.03 ± 1.24	4.33 ± 1.18	3.65 ± 1.12	0.001
TC/HDL-C	4.14 ± 1.32	4.18 ± 1.27	4.16 ± 1.39	3.89 ± 1.30	4.17 ± 1.38	3.42 ± 1.15	0.001
Dyslipidemia*, % (N/T)	87.7 (1,152/ 1,314)	88.0 (1,239/ 1,408)	80.6 (974/ 1,209)	70.4 (718/ 1,020)	80.1 (843/ 1,052)	66.0 (737/ 1,117)	0.001

TC, total cholesterol; HDL-C, HDL-cholesterol; N/T, number of individuals with dyslipidemia over the survey population

Dyslipidemia was defined as total cholesterol ≥5 mmol/L (~190 mg/dL) or HDL-cholesterol <1 mmol/L (~40 mg/dL) in men and <1.2 mmol/L (~45 mg/dL) in women or use of lipid-lowering drugs.

Please note the numbers for the survey population may differ slightly from those given in Table 1 as lipid analysis was not available for all individuals.



5) Hypertension in Czech Republic

Prof. Jiří Widimský Jr., MD, PhD

Arterial hypertension (Hypertension) is very frequent cardiovascular disease in Czech Republic with the prevalence in adult population (25-64 years) exceeding 35% (Table 3). The prevalence of hypertension increases with age so that in the decade 55-64 years 72% of men and 65% of women suffer from high blood pressure. The total number of hypertensive patients in Czech Republic is estimated to be 1,8 mil. subjects.

Approximately 75% of all hypertensive patients has knowledge about their disease. Appropriate control of blood pressure is reached in approximately 30% of all hypertensive subjects, which is comparable with other European countries.

For the measurement/diagnosis of Hypertension all standard procedures are used including office, home, automated office BP and 24-h ambulatory blood pressure monitoring (ABPM). ABPM is available in high number of general practitioners and specialists and is reimbursed by our health care system.

Majority of hypertensive patients is controlled and treated by general practitioners, specialists (e.g. mainly internists, cardiologists, nephrologists) usually treat more difficult and/or complex cases.

Patients with resistance to antihypertensive therapy or with suspicion to secondary form of hypertension are recommended and subsequently thoroughly investigated in specialized Arterial Hypertension Care centers throughout Czech Republic. There are seven Hypertension Expert centers in Czech Republic, all with the certificate of Centre of excellence of European society of Hypertension.

6) Dyslipidemia and familial hypercholesterolemia in Czech Republic

Assoc. Prof. Michal Vrablík, MD, PhD

Dyslipidemia represents one of the most important modifiable risk factors for atherosclerotic cardiovascular disease (CVD). Its prevalence raises with age reaching almost 90% in the age group 55+. This holds true despite the fact the mean levels of total and non-HDL-cholesterol have declined in both genders by more than 15% over last two decades representing the most important component explaining almost one half of the observed decrease of CVD mortality during the period mentioned. Except for diet and lifestyle changes this trend can be explained by fast penetration of lipid-lowering drugs (namely statins) that are available and fully reimbursed for high and very-high risk individuals. However, similarly to other populations, only about 25% of patients achieve the guidelines recommended treatment targets, which might be explained by low long-term adherence to lipid-lowering medications as well as reluctance towards using high intensity statin treatment (and/or statin-ezetimibe combination) by HCPs.

Patients with familial hypercholesterolemia (FH) are being provided complex diagnosis (including genetic testing), counselling and treatment in the 68 centres of the MedPed project (www.medped.cz) being organized and supervised by the Czech Society for Atherosclerosis since 1998 (www.athero.cz). Thanks to a systematic screening in the affected pedigrees more than 7500 FH probands have been identified and registered in the national FH database to date, which ranks the third highest detection rate in the world. The efforts of expert societies have been complemented by expanding activities of

FH patients' group (www.diagnozaFH.cz) affiliated with the international FH Europe organization providing educational resources and support to affected families.

Figure 3.: Dyslipidemia in different age groups (Post-MONICA survey)

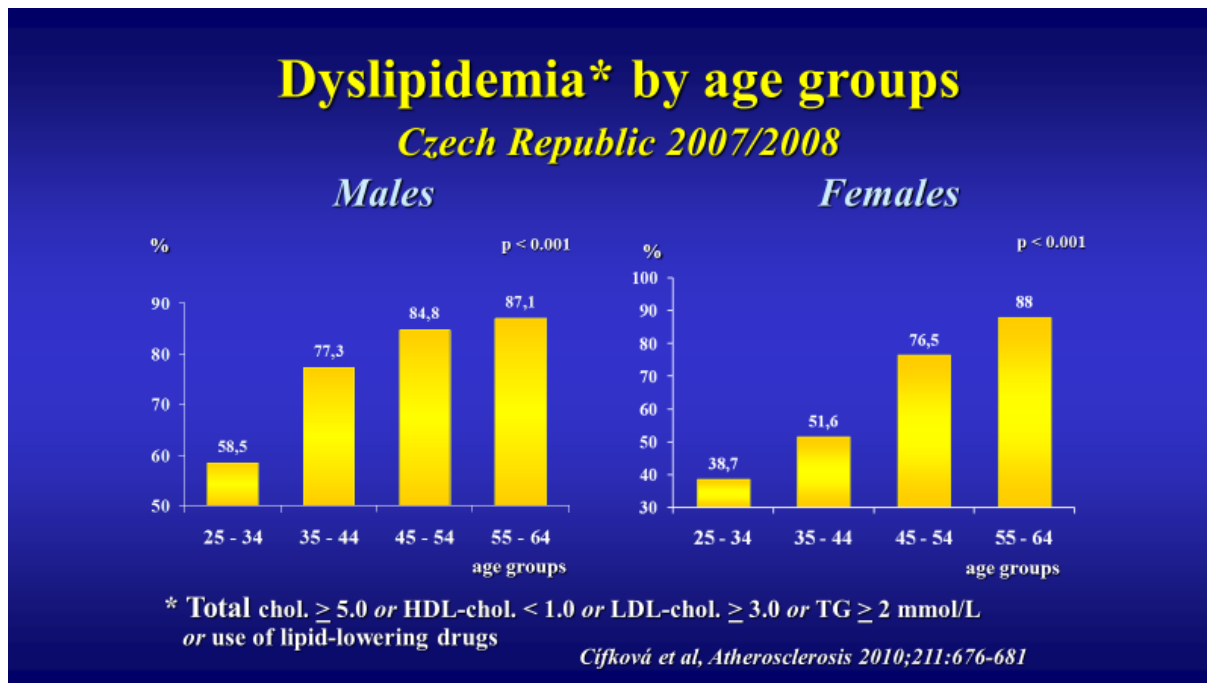
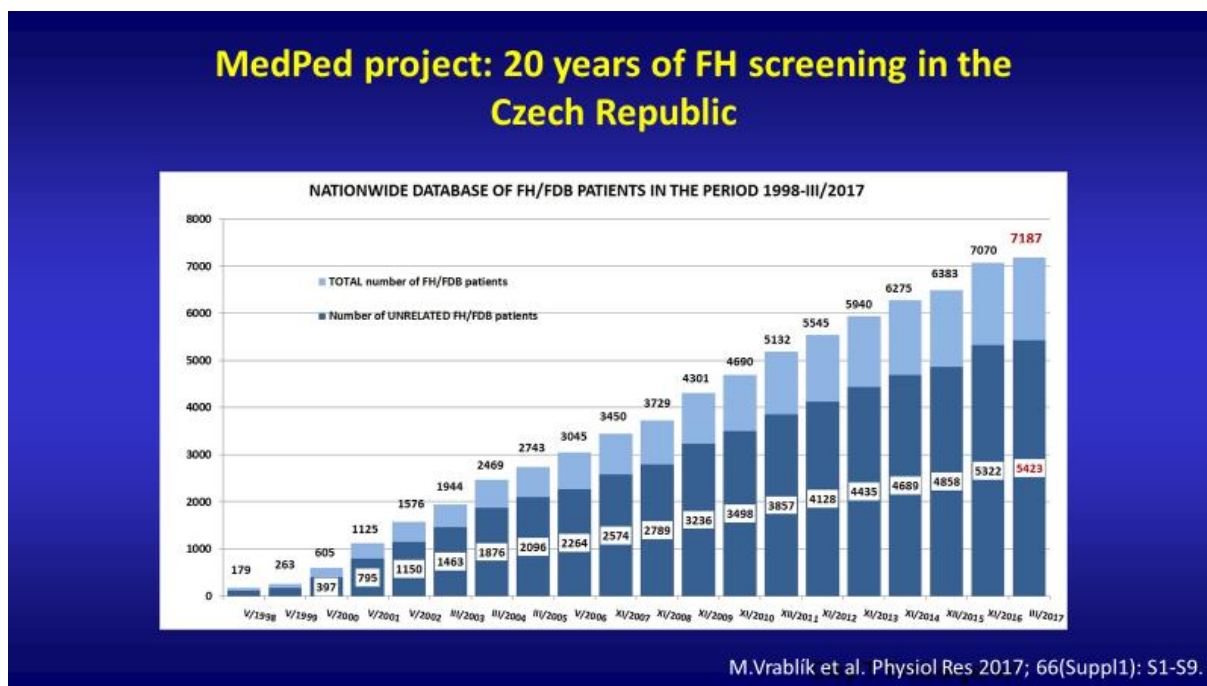


Figure 4.: Numbers of patients with familial hypercholesterolemia diagnosed and followed-up in MedPed project in the Czech Republic.



7) Smoking – prevalence, newly adopted legislation and system of care

Prof. Eva Králíková, MD, PhD

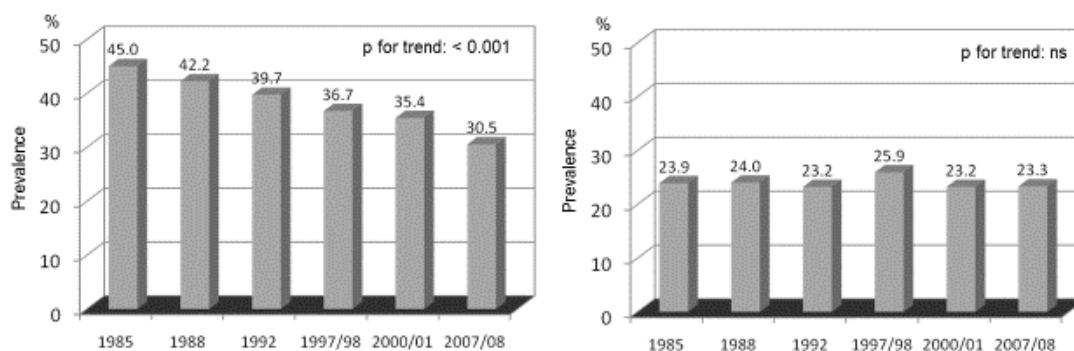
Smoking prevalence remains last 10 years around 30 % in the population 15+ (Vanova A et al., 2017, National Public Health Institute, available at http://www.szu.cz/uploads/documents/szu/aktual/uzivani_tabaku_2016_konecny_17_7.pdf?highlightWords=u%C5%BE%C3%ADv%C3%A1n%C3%AD+tab%C3%A1ku+2016).

In 2017, after many years of fight, the smoke-free legislation was adopted (law No. 65/2017), but still in the Parliament we have discussions about the possibility to withdraw it again.

Treatment of tobacco dependence is not broadly available to more than 2 million of the Czech smokers. Intensive care is offered in more than 40 Centres for Tobacco-Dependent, but except of one working full time for smokers only, their availability is limited to just few hours weekly. More than 100 pharmacies offer consultations to smokers, and system of education of nurses in the brief intervention is supported by the Centre of Excellence for Nurses in Tobacco Control, all in the frame of the Society for Treatment of Tobacco Dependence. On its webpage also contact to the national quitline (free of charge) or mobile application can be found: WWW.SLZT.CZ. Smoking cessation medication is not covered, just maximum of 4 weeks is reimbursed by some health insurance companies.

Majority of cigarettes is sold together with food, plain package was not implemented. Tobacco taxes are at the minimal EU level, population campaigns are missing.

Figure 5.: Prevalence of smoking between 1985 and 2007/08 in six districts of the Czech Republic in males (left panel) and females (right panel).





8) Obesity and metabolic syndrome

prof. Hana Rosolová, MD, PhD

Cardiovascular mortality was reduced more than 50 % in the Czech population at the turn of the century; nevertheless, obesity and type 2 diabetes mellitus (important cardiovascular risk factors) are increasing significantly.

Metabolic syndrome (MS), defined as accumulation of 3-5 risk factors associated with insulin resistance, brings 2-3fold higher risk for atherosclerotic cardiovascular diseases (CVD) and 5fold higher risk for type 2 diabetes (T2D) development. On that account, more attention should be paid to MS among the Czech population, esp. in the primary prevention of CVD and T2D.

The prevalence of MS is similar to other European developed countries; 21.4 %, Czech females and 32.5 % Czech males suffer from MS (data from the Czech PostMonica study, n = 3 537 subjects, during the years 2006-2009; the NCEP – ATP III definition 2001 was used). The prevalence of MS from the rural Czech population observed during 2008-2009 was 38 % females and 49 % males (n= 543 subjects); IDF 2005 definition of MS was used (screening of MS was done by the Czech Institute of MS, a non-profit organization).

Many Czech health professional societies recommend identifying subjects with obesity (esp. visceral type) and MS and to start early non-pharmacological and pharmacological interventions (Guidelines).

The Czech Institute of Metabolic Syndrome, a non-profit organization, contributes to this task since 2008. Members of the Institute arrange some educational activities for physicians and other medical staff and also activities for the public. E.g. a screening and individual interventions of risk factors of MS among rural Czech population, Educational programme for Czech basic schools teachers (2013 – 2014) supported by the European Educational Programme et.c (www.cims-ops.cz).



9) Cardiovascular rehabilitation in Czech Republic

prof. Eliška Sovová, MD, PhD

The Phase II cardiovascular rehabilitation (CR) after myocardial infarction and other conditions (see Table 6) is performed in spa facilities and in CR Centres.

Spa care has a long tradition and recently, cardiac rehabilitation has been offered not only in spas with long traditions of providing cardiac rehabilitation, such as Konstantinovy Lázně, Poděbrady and Teplice nad Bečvou, but also in other spas, e.g. Karlovy Vary, Karlova Studánka, Mariánské lázně, etc.

Unfortunately, the number of patients treated in Czech spas for cardiovascular indication has been decreasing, namely the number of 16 395 patients in 2006 reduced to 4 885 patients in 2016. The reason is not clear, possible factors may include non-compliance of physicians and patients and changes in reimbursement for spa treatment.

The first CR Centres program started in 1993. CR services are mostly paid by health insurance companies. There are 6 centres in the Czech Republic, the number of patients in CR is approximately 2 000 per year. The average duration of a CR program is 12 weeks, the average session frequency is three times per week. Each exercise session is 60 minutes long at average.

Table 6: Indications for Phase II cardiac rehabilitation in the Czech republic include

1. Symptomatic coronary heart disease
2. Post cardiac event, such as myocardial infarction
3. Peripheral obstructive ischemic disease
4. Conditions after vein thrombosis, chronic lymphedema
5. Post procedure, such as cardiac and vascular surgery (coronary artery bypass, heart valve surgery, heart transplant, etc)
6. Patients after PCI

10) Conclusions

The Czech Republic benefits from a well-organized and widely available healthcare system imposing minimal economic burdens on patients with risk factors and cardiovascular diseases. In addition, improving socioeconomic conditions in the country are favourable for lifestyle changes. Therefore, in spite of the high prevalence of risk factors, cardiovascular morbidity and mortality is decreasing. More than half of the very substantial fall in CHD mortality in the Czech Republic between 1985 and 2007 was attributable to reduction in major cardiovascular risk factors. Improvement in treatments accounted for approximately 43% of the total mortality decrease. These findings emphasize the value of primary prevention and evidence-based medical treatment. The Czech Society of Cardiology makes major efforts to further improve the control of risk factors and incite healthy lifestyle changes.



11) Key references:

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