METABOLIC RISK OF HYPERTENSIVES

DATA FROM THE "LIVE BELOW 140/90 MMHG" PROGRAM

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On behalf of the Hungarian Society of Hypertension Working Group

In 2005 the Hungarian Society of Hypertension started a new program called „Live below 140/90 mmHg" for every hypertensive patients in Hungary.
The aim of this program is to increase the hypertensive patients' concordance with a help of non-medical possibilities.
The data of the patients were collected into the Hungarian Hypertension Registry.

We analyzed the data of included hypertensive patients from the aspects of metabolic parameters.

The results of the measured metabolic parameters

Total cholesterol
Average + SD 5,6 ± 1,1 mmol/l

	N	%
<=5 (normal value)	9196	30.1%
5,01-5,2	2724	8.9%
5,21-6,2	10539	34.4%
6,21-8	7292	23.8%
>8	849	2.8%
	30600	100%

Missing data: 7772

Glucose
Average+ SD 6.1+ 1.8 mmol/l

	N	%
<=5,6 (normal value)	15381	50.6%
5,61-6,1	4985	16.4%
6,11-10	8599	28.3%
>10	1432	4.7%
	30397	100%

Missing data: 7975

HDL cholesterol
Average + SD 1,4 ± 0,5 mmol/l

	N	%
>1,3 (normal value)	11519	48.0%
1,01-1,3	8494	35.4%
<=1	3969	16.5%
	23982	100%

Missing data: 14390

Triglyceride
Average + SD 2.07+ 1.2 mmol/l

	N	%
<=1,7 (normal value)	13521	45.3%
1,71-2,2	7035	23.6%
2,21-3,5	6567	22.0%
3.51-5.6	2079	2.1%
>5,6	629	2.1%
	29831	100%

Missing data: 8541

Correlation between the body mass index and the measured metabolic parameters

	glucose	Chol-tot	HDL chol	Triglyceride
BMI (kg/m²)				
<25	5.8	5.68	1.43	1.69
25-30	6*	5.78**	1.38**	1.9*
30-35	6.38*	5.82*	1.33*	2.07*
35-40	6.63*	5.86+	1.32	2.17*
>40	6.92*	5.88++	1.33	2.34*

* p<0,001 ** p<0,0001 + p<0,01 ++ p<0,02

There were positive relationship in the respect of glucose, total cholesterol and triglyceride

Relationship between the waist values and metabolic parameters

HDL	>1.3	1-1.3	<1,0
waist	95.5	97.3	99.5

TG	<1,7	1.7-2.2	2.2-3.5	3.5-5.6	>5,6
waist	94.5	95.7	99.2	102.3	102

glucose	<5,6	5,6-6,1	9,1-10	>10
waist	93.4	97.1	100,7	10.38

The increase of waist values is associated to greater triglyceride and glucose and smaller HDL cholesterol values

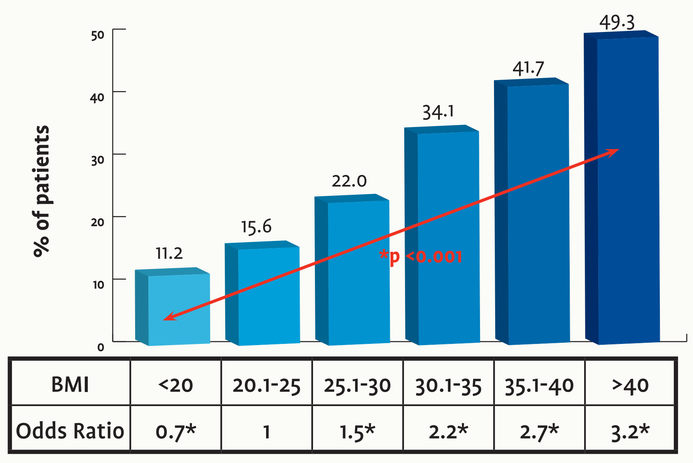
Multivariate regression analysis

factors	BMI	Waist
	F value	F value
HDL chol	27*	18.4*
TG	128**	53.1**
glucose	157**	68.7**
Chol-tot	0.14+	2.26+

* p<0,001 ** p<0,0001 + ns

The obesity (BMI and waist) is highly correlated with the decreased HDL cholesterol, the elevated triglyceride and fasting glucose values

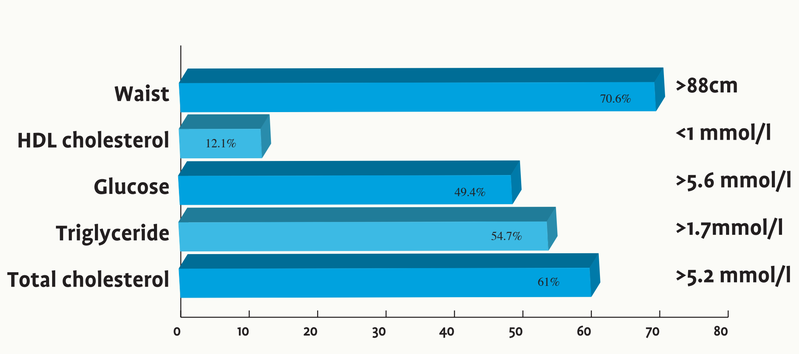
Diabetes mellitus type 2-overweight



BMI	<20	20.1-25	25.1-30	30.1-35	35.1-40	>40
Odds Ratio	0.7*	1	1.5*	2.2*	2.7*	3.2*

Missing data: 3413 n=34959

Components of metabolic syndrome in the population in Hungary



Reference: Kékes E., Schanberg Zs., Pál L., de Châtel R., Farsang Cs., Kiss I.: Kardiovaszkuláris rizikó a magyarországi hipertóniás betegekben - A Magyar Hypertonia Társaság „Éljen 140/90 Hgmm alatt" mozgalmának első eredményei Háziorvos Továbbképző Szemle 2006; XI.: 474-480.

Summary

- Within the "Live under 140/90 mmHg " activity 38.372 hypertensive patient's data have been collected from the 6 regional geographic area of Hungary with a very great homogeneity.
  - –61 % of pts have abnormal total cholesterol
  - –54.7 % of pts have abnormal triglyceride
  - –49.4 % of pts have abnormal glucose
  - –12.1 % of pts have abnormal HDL cholesterol
- The visceral obesity (waist) was highly correlated with the decreased HDL cholesterol, the elevated triglyceride and fasting glucose values (p value <0.001, 0.0001, 0.0001 respectively) The metabolic syndrome showed significantly increasing trend for ages in this hypertensive population.
- We must change the methods and activity of patients' and doctors' education and we must call the attention to achievement of the target blood pressure. We believe it that the „Live below 140/90 mmHg" program will help us to reach the target blood pressure at hypertensive patients.

ÉLJEN 140/90 ALATT!

HUNGARIAN SOCIETY OF HYPERTENSION