

*Bylica J, Major P, Grodzicki T, Fornal M. Are the ESC guidelines on lipid-lowering treatment implemented in morbidly obese patients qualified for bariatric surgery?. Kardiol Pol. 2023.*

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### **Characterization of patients**

All enrolled patients had morbid obesity defined as: body mass index  $>40$  or  $>35$  and at least one obesity-related comorbid condition i.e., diabetes mellitus (DM), hypertension, dyslipidemia, obstructive sleep apnea.

The following information from medical records was gathered: age, sex, body weight, height, body mass index, smoking status, systolic blood pressure, diastolic blood pressure, medicines taken, and diagnosed comorbidities, in. One researcher (JB) measured waist and hip circumferences. Moreover, serum levels of given parameters were acquired: triglycerides TG, total cholesterol, high-density lipoprotein cholesterol (HDL-C), LDL-C, creatinine, glomerular filtration rate, alanine aminotransferase glucose, glycated hemoglobin, and creatine kinase.

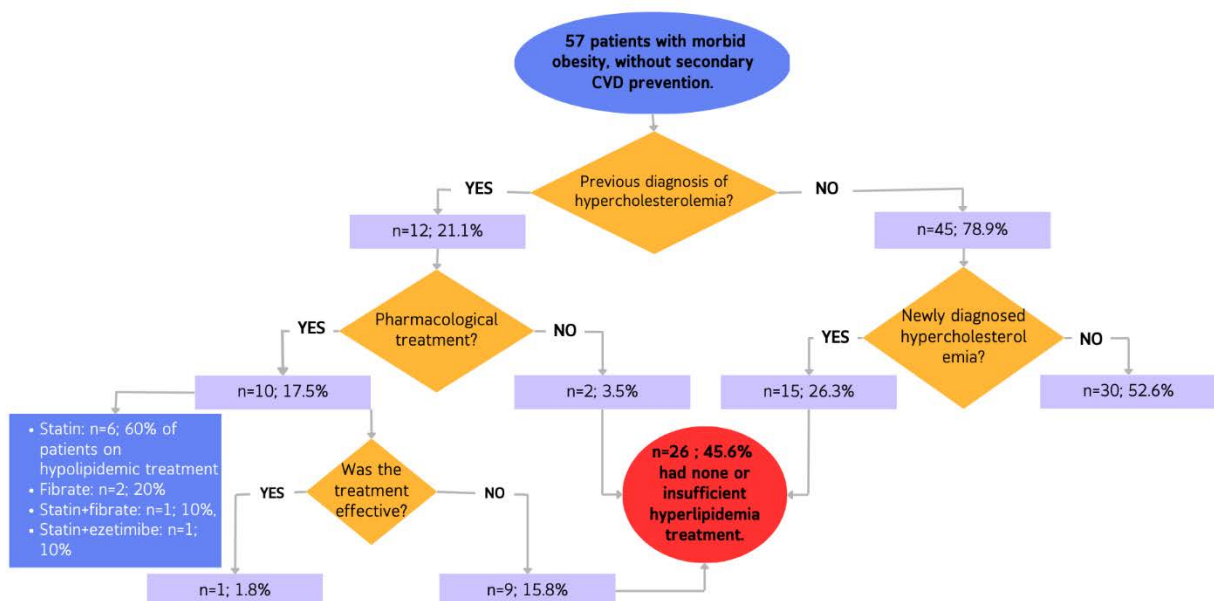
Using the gathered data, we established mean systolic blood pressure and diastolic blood pressure (from 3 consecutive blood pressure measurements performed on the ward), while non-HDL-C was calculated as total cholesterol minus HDL-C. According to guidelines, we used HbA1C or two fasting glucose levels (if available) to diagnose DM in individuals without its former detection [1]. The 10-year risk of (fatal and non-fatal) cardiovascular (CV) events was estimated according to the 2021 ESC guidelines and the SCORE2 algorithm [1]. For persons 35-39 years of age, CV risk was calculated and reported as for 40 years old individuals. Next, every patient was assigned to an adequate risk category. Patients with DM were ascribed to the high-risk group, hence they all had additional ASCVD risk factor (obesity) and no data regarding target organ damage (microalbuminuria, proteinuria, or retinopathy) was available. They also had SCORE2 estimated and were assigned to the very high-risk group if they met SCORE2 criteria[1].

Statistical analysis

IBM SPSS Statistics for Windows, Version 28.0. (Armonk, NY:IBM Corp) software was used for statistical analysis. Continuous data values were presented as mean with standard deviation (SD) or median with interquartile range (IQR), qualitative data as the number and percentage. The Chi-squared test and Fisher test were used to compare qualitative data, while the Student's t-test and the Mann–Whitney U-test were used for quantitative data. Continuous variables were first checked for normal distribution by the Shapiro-Wilk test. In analysis variables with other than normal distribution the Mann–Whitney U-test was used, otherwise, for data with normal distribution, the Student's t-test was used. For all tests a P value less than 0.05 was considered significant.

1. Cosentino F, Grant PJ, Aboyans V, et al. 2019 ESC Guidelines on diabetes, pre-diabetes, and cardiovascular diseases developed in collaboration with the EASD. *Eur Heart J* 2020;41:255–323.
2. Visseren FLJ, Mach F, Smulders YM, et al. 2021 ESC Guidelines on cardiovascular disease prevention in clinical practice. *Eur Heart J* 2021;42:3227–337.

**Figure S1.** Flowchart depicting lipid-lowering treatment in patients with morbid obesity before bariatric surgery



<b>Table S1.</b> Comparison between females and males in terms of basic characteristic and selected parameters.			
	<b>Female (n=41)</b>	<b>Male (n=16)</b>	<b>P value</b>
Age, years, median (Q1-Q3)	48.00 (39.00-51.00)	42.00 (36.25-49.00)	0.14
BMI, kg/m <sup>2</sup> median (Q1-Q3)	41.23 (37.50-46.74)	41.76 (38.29-50.04)	0.39
Maximal noted body weight, kg, median (Q1-Q3)	122.00 (110.50-140.00)	142.00 (124.75-180.00)	0.01
Waist circumference, cm , median (Q1-Q3)	112.50 (108.00-124.00)*	132.00 (124.50-142.00)	<0.001
Hip circumference, cm, mean (SD)	132.66 (14.56)*	135.81 (17.24)	0.49
Waist/hip ratio, mean (SD)	0.88 (0.08)*	0.99 (0.08)	<0.001
Smoker, n (%)	7 (17.1%)	3 (18.8%)	0.88
Diabetes mellitus, n (%)	10 (24.4%)	5 (38.5%)	0.60
SBP, mmHg, mean (SD)	135.15 (14.00)	134.31 (11.08)	0.83
DBP, mmHg, mean (SD)	83.92 (8.40)	82.60 (7.01)	0.58
CVD risk group, n (%)			
Low-medium	23 (56.1%)	3 (18.8%)	0.04
High	17 (41.5%)	12 (75%)	

Very high	1 (2.4%)	1 (7.7%)	
CVD risk, %, median (Q1-Q3)	2.00 (1.00-3.75) <sup>a</sup>	3.00 (2.25-4.00) <sup>b</sup>	0.06
Require lipid-lowering treatment, n (%)	16 (39.0%)	11 (84.6%)	0.04
ALT, U/l, median (Q1-Q3)	42.00 (31.00-62.50)	55.50 (46.75-81.75)	0.05
Total Cholesterol mmol/l, median (Q1-Q3)	4.33 (3.75-4.85)	4.40 (3.68-5.18)	0.63
HDL-C mmol/l, median (Q1-Q3)	1.16 (1.08-1.38)	1.07 (0.94-1.13)	0.01
Non-HDL-C, mmol/l, mean (SD)	3.09 (0.64)	3.35 (0.90)	0.28
LDL-C, mmol/l, mean (SD)	2.60 (0.64)	2.82 (0.86)	0.30
TG, mmol/l, median (Q1-Q3)	1.27 (0.94-1.59)	1.38 (1.04-1.52)	0.36
Glucose, mmol/l, mean (SD)	5.99 (1.72)	6.33 (1.72)	0.51
HbA1C, %, mean (SD)	5.87 (0.78)	6.61 (0.90)	0.14
CK, U/l, median (Q1-Q3)	204.00 (135.00-278.50)	220.50 (177.00-411.75)**	0.24
Creatinine, $\mu$ mol/l, mean (SD)	70.43 (11.67)	75.93 (18.22)	0.17
GFR, ml/min/1.73 m <sup>2</sup> , mean (SD)	85.32 (16.45)	100.75 (16.52)*	0.01

Abbreviations: ALT, alanine aminotransferase; BMI, body mass index; CK, creatine kinase; CVD, cardiovascular disease; DBP, diastolic blood pressure; GFR, glomerular filtration rate; HbA1C, Glycated hemoglobin; HDL-C, high-density lipoprotein cholesterol; LDL-C, low-density lipoprotein

cholesterol; Non-HDL-C, non-high-density lipoprotein cholesterol; Q1-Q3, quartile1-quartile3; SBP, systolic blood pressure; SD, standard deviation; TG, triglycerides.

a- CVD risk calculated for 32 individuals

b- CVD risk calculated for 12 individuals

\*-no data for 1 individual

\*\* -no data for 2 individuals