

INCREASED CARDIOVASCULAR RISK AMONG OLDER ADULTS WITH HEROIN USE DISORDER: A COMPARATIVE STUDY WITH THE POPULATION-BASED REGICOR COHORT

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Background

Cardiovascular (CV) disease is currently a major health concern in aging population with substance use disorders. The aim of the study was to compare CV risk in individuals with heroin use disorder (HUD) with that of general population.

Methods

A cross-sectional study was carried out comparing CV risk of adults >50 years with HUD receiving methadone therapy at a drug abuse center with to an age-and gender-matched sample (ratio of 1:5) of subjects from the general population of the same area (REGICOR cohort). High cardiovascular risk at 10-year was the primary outcome according to the cut-offs of three predictive functions: REGICOR (>10% for coronary event), SCORE (>5% for CV mortality) and FRESCO (>7.5% for CV event).

Results

Five hundred ninety-four individuals, 432 (72.7%) men, with a mean age of 55.7 ± 4.8 years were included, 99 with HUD and 495 from REGICOR cohort. Obesity (35.2% vs 21.2%; $p < 0.01$), hypertension (42.1% vs 26.3%; $p < 0.01$), total cholesterol (65.4% vs 30.3%; $p < 0.01$) and LDL-cholesterol ≥130 mg/dL (59.3% vs 27.2%; $p < 0.01$) were higher in the control group, while smoking (96.0% vs 25.9%; $p < 0.01$), low HDL-cholesterol (51.5% vs 25.8%; $p < 0.01$), hypertriglyceridaemia (39.4% vs 18.8%; $p < 0.01$), triglycerides/HDL-cholesterol ratio >2 (71.7% vs 53.5%; $p < 0.01$) and atherogenic dyslipidaemia (30.3% vs 10.5%; $p < 0.01$), were higher in patients with HUD. After adjusting for age, sex and BMI, individuals with HUD were more likely to score high CV risk than general population: REGICOR OR: 4.44, (95%IC:2.11-9.34; $p < 0.01$); SCORE OR: 3.45; (95%IC:1.70-7.01; $p < 0.01$); FRESCO OR: 5.85 (95%IC:1.51-22.69; $p < 0.01$).

Table 1. Clinical characteristics of comparison study participants.

	HUD cohort (n= 99)	REGICOR cohort (n= 495)	p
Age ¹	55.5 (4.7)	55.5 (4.6)	1.00
Sex			
Men (%)	72 (72.7)	360 (72.7)	
Women (%)	27 (27.3)	135 (27.3)	1.00
Smoking	95 (96.0)	127 (25.9)	<0.01
BMI (kg/m ²)	27.8 (4.15)	25.5 (4.93)	<0.01
Normal weight	52 (52.5 %)	118 (24.1 %)	
Overweight	26 (26.3 %)	198 (40.4 %)	
Obesity	21 (21.2%)	174 (35.2%)	
Waist circumference ^{1,*}	97.5 (18.3)	95.3 (12.5)	0.29
Abdominal obesity [*]	62 (62.6 %)	81 (65.3 %)	0.79
Systolic blood pressure ¹ (mmHg)	133 (17.4)	128 (18.3)	0.01
Diastolic blood pressure ¹ (mmHg)	79.9 (11.2)	81.7 (10.1)	0.14
Hypertension	26 (26.3 %)	204 (42.1 %)	0.01
Creatinine (mg/dL) ¹	0.93 (0.56)	0.96 (0.16)	0.61
Glucose (mg/dL) ¹	111 (36.2)	102 (26.3)	0.01
Diabetes	14(14.1%)	50(10.1%)	0.36
Total cholesterol (mg/dL) ¹	181 (40.2)	218 (41.0)	<0.01
Total cholesterol ≥200 mg/dL	30 (30.3%)	324 (65.4%)	<0.01
LDL-cholesterol (mg/dL) ¹	111 (37.3)	143 (35.3)	<0.01
LDL-cholesterol ≥130 mg/dL	27 (27.2%)	294 (59.3%)	<0.01
HDL-cholesterol (mg/dL) ¹	44.0 (17.3)	50.1 (13.5)	0.01
HDL-cholesterol ≤40 mg/dL men or ≤50 mg/dL women	46 (46.5 %)	105 (21.2 %)	<0.01
Triglycerides ²	121 [88.5;198]	101 [76.0;140]	<0.01
Triglycerides >150 mg/dL	39 (39.4%)	93 (18.8%)	<0.01
Atherogenic dyslipidaemia	30 (30.3 %)	52 (10.5 %)	<0.01
Hypertriglyceridaemic waist [*]	30(30.3%)	17 (4.06 %)	<0.01
Triglycerides/ HDL-cholesterol ¹	5.0 (6.2)	2.7 (2.3)	<0.01
Triglycerides/ HDL-cholesterol >2	71(71.7%)	265(53.5%)	<0.01
REGICOR >10%	15 (15.2 %)	28 (5.88 %)	<0.01
SCORE >5%	21 (21.2 %)	54 (11.3 %)	0.01

Data are presented as No. (%) unless otherwise indicated. 1: Data presented as mean ± standard deviation. 2: Data presented as median and interquartile range.
* Data available only for 122 participants of the comparison group.
Abbreviations: HUD, opioid use disorder; cm, centimetres; BMI, body mass index; LDL, low-density lipoproteins; HDL, high-density lipoproteins

Table 2. Prevalence of cardiovascular risk factors according to gender in individuals with opioid use disorder.

	Men (n= 72)	Women (n= 27)	p
Smoking	69 (95.8%)	26 (96.3%)	0.91
BMI obesity	14 (19.4%)	7 (25.9%)	0.48
Abdominal obesity	44 (61.1%)	18 (66.6%)	0.61
Hypertension	38 (52.8%)	12 (44.4%)	0.46
Diabetes	11 (15.3%)	3 (11.1%)	0.59
Total cholesterol >200 mg/dL	20 (27.8%)	10 (37.0%)	0.37
LDL-cholesterol >130 mg/dL	19 (26.4%)	8 (29.6%)	0.92
HDL-cholesterol ≤40 mg/dL men or ≤ 50 mg/dL women	33 (45.8%)	18 (66.7%)	0.06
Triglycerides >150 mg/dL	27 (37.5%)	12 (44.4%)	0.52
Total cholesterol/ HDL-cholesterol <5	31 (43.1%)	14 (51.9%)	0.43
Triglycerides/ HDL-cholesterol >2	49 (68.1%)	22 (81.5%)	0.14
Hypertriglyceridaemic waist	16 (22.2%)	9(33.3%)	0.26
Atherogenic dyslipidemia	21(29.2%)	9(33.3%)	0.8
REGICOR >10%	12 (16.7 %)	3 (11.1 %)	0.68
SCORE >5%	18 (25.0 %)	3 (11.1 %)	0.14

Data are presented as No. (%).
Abbreviations: HUD, heroin use disorder; cm, centimetres; BMI, body mass index; LDL, low-density lipoproteins; HDL, high-density lipoproteins.

Conclusions

Older adults with HUD on methadone therapy have a more atherogenic lipid profile and increased cardiovascular risk than the general population. CV risk factor screening should be included in the routine clinical care among HUD individuals to achieve a more effective CV prevention.

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