

Prevalence and management of FH in coronary heart disease patients

An analysis of EUROASPIRE IV

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ISA 2015 Amsterdam

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EUROASPIRE IV



Familial hypercholesterolemia

- FH: genetic disorder of lipoprotein metabolism
 - *LDLR, APOB, PCSK9*
 - High LDL-cholesterol and premature CHD + CHD death
- Early identification and treatment warranted
- Prevalence 1:300
- Prevalence incompletely known among patients with CHD
- Could raise awareness and assist in screening
- Objective: estimate prevalence of potential FH in patients with CHD and characterize their management



Study population

- EUROASPIRE IV Survey
 - Cross-sectional survey in 24 countries, May '12 to April '13
 - 18 - 80 years
 - 6 - 36 months after CHD event (MI, CABG or PTCA)
 - Standardized questionnaire, measurements and blood sampling
- Exclude: missing LDL-C or information on statin use, use of other lipid lowering drugs (except ezetimibe)
- Primary outcome: prevalence potential FH
- Secondary outcome: CHD risk factors and risk factor control
- Regression modeling to compare groups



Score for Potential FH

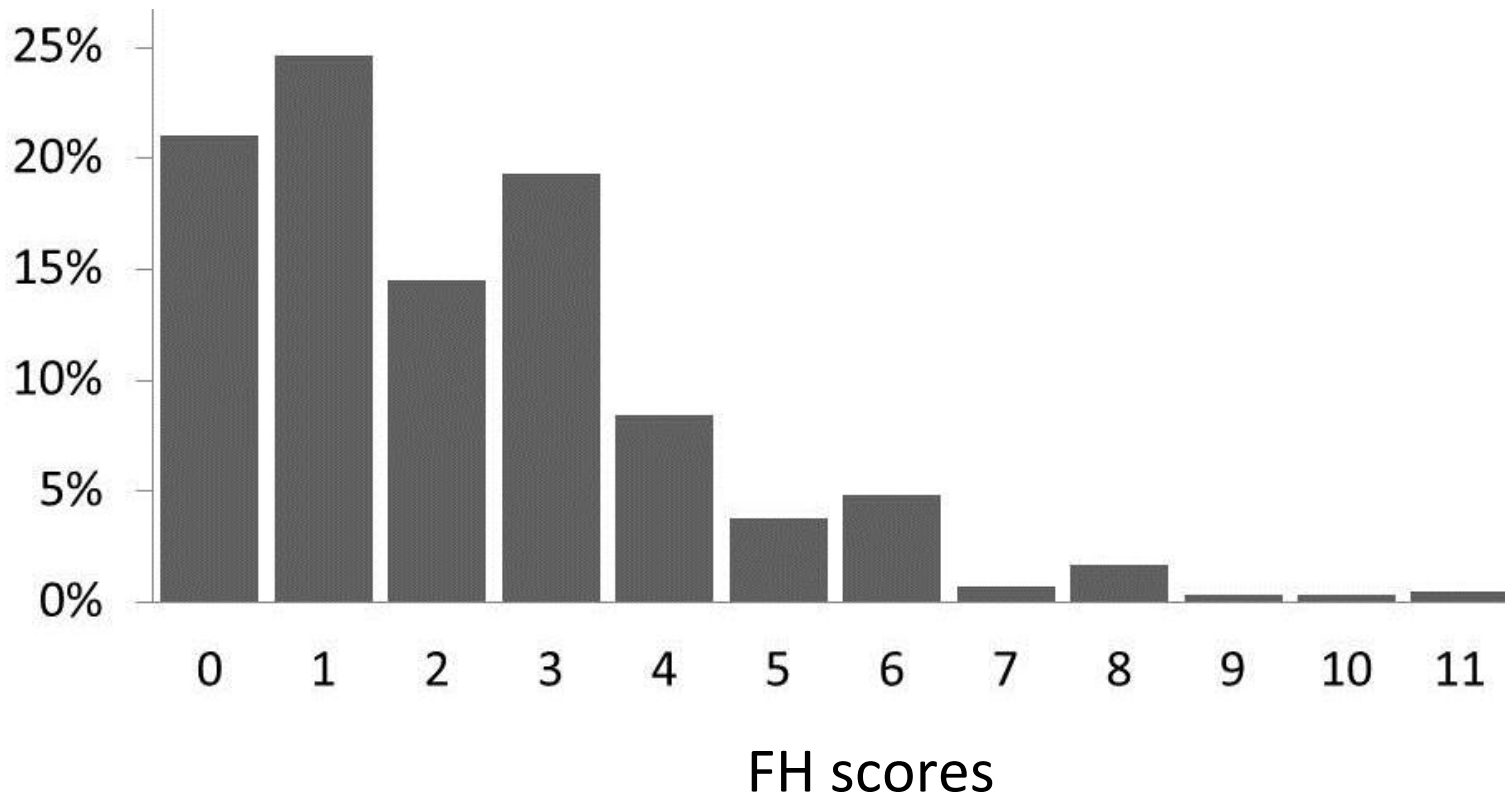
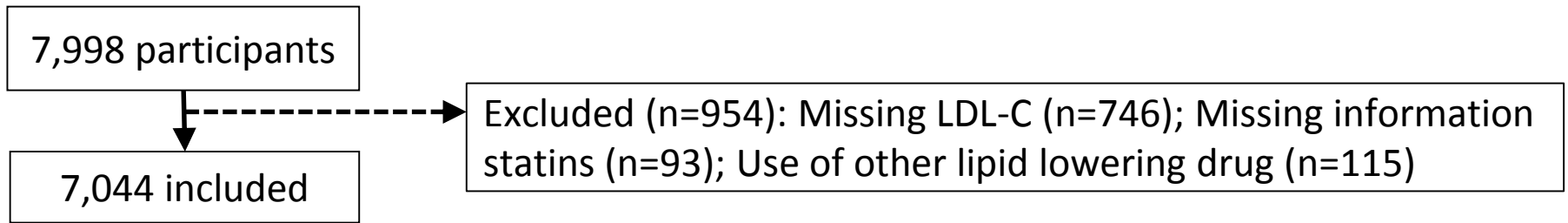
Premature CHD*	2 points
Family history of premature CHD*	1 point
LDL-C 4.0 – 4.9 mmol/L	1 point
LDL-C 5.0 – 6.4 mmol/L	3 points
LDL-C 6.5 – 8.4 mmol/L	5 points
LDL-C \geq 8.5 mmol/L	8 points
* (<55 or 60 years for men and women, respectively)	

Diagnosis	
0 – 2 points	Unlikely FH
3 – 5 points	Possible FH
6 – 8 points	Probable FH
>8 points	Definite FH

} Potential FH



Patient distribution

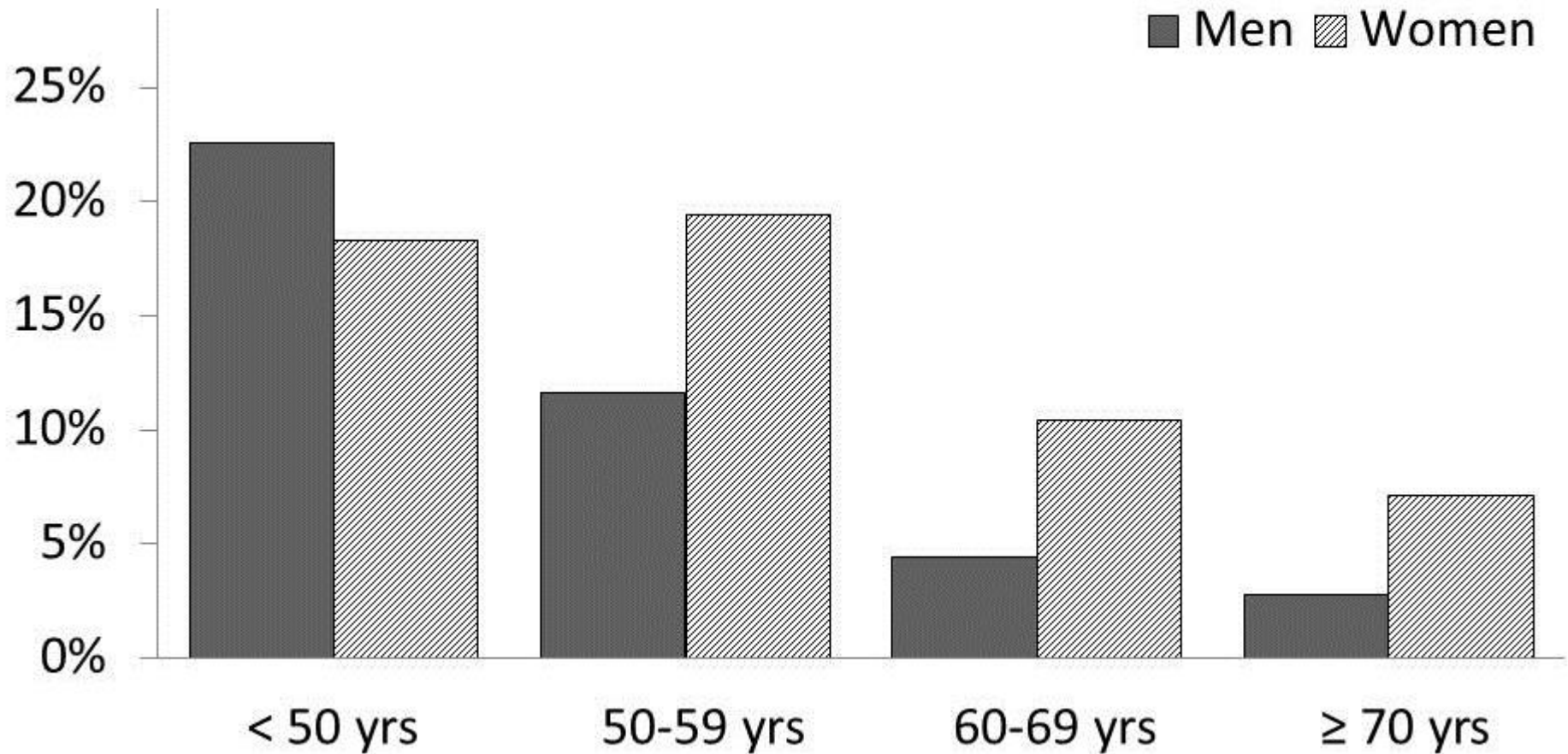


Prevalence of potential FH

	<i>Number</i>	FH classification				
		<i>Unlikely</i>	<i>Possible</i>	<i>Probable</i>	<i>Definite</i>	<i>Potential FH</i>
All	7,044	60.1% (4,234)	31.6% (2,223)	7.2% (510)	1.1% (77)	8.3% (587)
Men	5,335	62.4% (3,330)	30.1% (1,607)	6.7% (357)	0.8% (41)	7.5% (398)
Women	1,709	52.9% (904)	36.0% (616)	9.0% (153)	2.1% (36)	11.1% (189)
Age < 60 years	2,212	32.5% (719)	52.1% (1,152)	13.7% (304)	1.7% (37)	15.4% (341)
Age ≥ 60 years	4,832	72.7% (3,515)	22.2% (1,071)	4.3% (206)	0.8% (40)	5.1% (246)



Prevalence by age and gender



CHD risk factors and management

	<u>Unlikely / Possible</u>		<u>Potential FH</u>		<i>P-value*</i>
Current smoking	14.8%	958 / 6,457	25.0%	147 / 587	0.01
Self-reported diabetes	26.6%	1,710 / 6,425	21.1%	123 / 584	0.10
Obesity ^a	36.6%	2,358 / 6,440	39.1%	228 / 583	0.80
Central obesity ^b	57.4%	3,647 / 6,349	59.8%	345 / 577	0.64
Low HDL ^c	36.8%	2,374 / 6,457	34.6%	203 / 587	0.01
High TG ^d	30.0%	1,823 / 6,087	46.2%	259 / 560	<0.01
RR <140/90 mmHg	62.8%	4,050 / 6,447	58.5%	343 / 587	<0.01
Quit smoking ^e	51.9%	965 / 1,859	46.5%	120 / 258	0.18
High physical activity ^f	42.4%	2,110 / 4,982	40.7%	175 / 430	0.06
HbA1c <7% ^g	53.8%	916 / 1,702	57.7%	71 / 123	0.21
Aspirin	94.2%	6,081 / 6,457	96.4%	566 / 587	0.35
Beta-blockers	83.2%	5,374 / 6,457	85.7%	503 / 587	0.48
ACE inhibitor or ARB	75.4%	4,866 / 6,457	76.3%	448 / 587	0.35

* adjusted for age and gender; a] BMI ≥ 30 ; b] waist circumference ≥ 102 (men) or ≥ 88 cm (women); c] < 1 (men) or < 1.2 mmol/L (women); d] ≥ 1.7 mmol/L; e] since event; f] IPAQ Short Form questionnaire; g] in patients with diabetes



Conclusion and discussion

- Prevalence potential FH in CHD patients: 8.3%
- Inverse relation with age
- Higher prevalence among women
- Risk profile seem worse in potential FH patients
- Strengths: large sample size, standardized documentation of events and medication, central lipid measurements
- Limitations: potential error in correction factors of statins, potential survival bias

