

Women less likely to receive recommended statin doses to prevent cardiovascular events

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	Female Gender n=18,653 (40.3%)	Male Gender n= 27,657 (59.7%)	p-value
Age (years)	68.1	65.9	<0.001
BMI (kg/m ²)	27.7 ± 5.8	27.7 ± 5.8	<0.05
Hypertension	79.4%	75.6%	<0.001
Diabetes	55.3%	47.0%	<0.001
Ischemic Heart Disease	46.1%	57.6%	<0.001
Cerebrovascular Disease	17.5%	16.5%	<0.01
Peripheral Artery Disease	6.0%	8.8%	<0.001
Statin-Treatment			
Simvastatin	43.1%	38.5%	<0.001
Dose (mg/day)	23.6 ± 11.1	25.6 ± 11.9	<0.001
Atorvastatin	36.5%	39.5%	<0.001
Dose (mg/day)	20.5 ± 13.0	23.1 ± 17.9	<0.001
Rosuvastatin	11.5%	13.0%	<0.001
Dose (mg/day)	13.6 ± 9.8	14.7 ± 10.5	<0.001
Pravastatin	5.2%	5.4%	=0.21
Dose (mg/day)	26.4 ± 11.3	27.9 ± 12.0	<0.01
LDL-Target Achievement			
LDL-C (mg/dl) median (quartiles)	100 (77,127)	92 (71,117)	<0.001
LDL-C < 70mg/dl	17.5%	24.0%	<0.001

BMI: body mass index; LDL: low-density lipoprotein; LDL-C: low-density lipoprotein cholesterol. Note: Mean BMI values are rounded and the large number of patients in the study makes even small differences significant. Credit: ESC

Women at high risk of cardiovascular events are less likely to receive

recommended statin doses for secondary prevention, according to results from the DYSIS study presented today at ESC Congress.

The importance of lowering low-density lipoprotein (LDL) [cholesterol](#) is undisputed, with research demonstrating that a decrease of 1 mmol/l (39 mg/dl) could reduce the five year risk of major coronary events, need for revascularisation to open blocked arteries, and stroke by approximately a fifth. Additional decreases improve outcomes even more.

This rationale is reflected by European Society of Cardiology (ESC) / European Atherosclerosis Society (EAS) guidelines, which advocate pursuing LDL cholesterol treatment targets that are defined based on a patient's risk. However, many studies have shown that in real life practice the rate of achieving an LDL cholesterol target of less than 70 mg/dl for very [high risk](#) patients in secondary prevention is just 20-25%.

"Observational trials in many fields of cardiology have shown that female patients are less likely to be treated according to current guidelines," said lead author Dr Anselm Kai Gitt, a cardiologist at Heart Centre Ludwigshafen, Germany. "We therefore raised the question of whether female sex has an impact on reaching the LDL cholesterol target of less than 70 mg/dl for secondary prevention in clinical practice."

This study assessed how many male and female patients truly achieve treatment targets in clinical practice. The analysis was part of the multinational cross-sectional Dyslipidaemia International Study (DYSIS) in Europe, Canada, South Africa, the Middle East and China. Between 2008 and 2012, 57 855 consecutive outpatients treated with statins were enrolled into the study.

Data was collected on [cardiovascular risk factors](#), [statin](#) treatment and

dose, and LDL cholesterol level. All information was obtained under real life conditions in an outpatient setting. Each patient's risk of a cardiovascular event was calculated using the ESC SCORE risk charts. The researchers then examined the association between female sex and achieving an LDL cholesterol level of less than 70 mg/dl in patients at very high risk of a cardiovascular event.

A total of 46 310 [patients](#) in the study were at very high risk of a cardiovascular event, of whom 18 653 (40.3%) were [women](#). Compare to men, [female patients](#) were older, more often had risk factors such as hypertension and diabetes, but less often suffered from already manifest ischaemic heart disease.

The investigators found that women were more often treated with less potent statins as well as with lower doses of statins, independent of the statin used (table). Just 17.5% of women reached the LDL cholesterol target of less than 70 mg/dl compared to 24% of men (p

Dr Gitt said: "Women at very high [risk](#) of a cardiovascular event were treated with less potent statins and lower doses of statins in clinical practice than men. Compare to men, women had a 32% lower chance of reaching the LDL cholesterol target recommended by ESC / EAS guidelines. More research is needed to discover why women are inadequately treated so that preventable [cardiovascular events](#) can be avoided."

Provided by European Society of Cardiology

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