Gender differences low-density lipoprotein cholesterol reduction with PCSK9 inhibitors in real world patients

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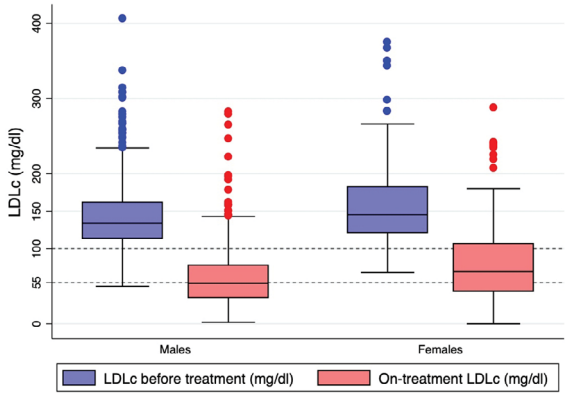
Background: Monoclonal antibodies that inhibit the proprotein convertase subtilisin/kexin type 9 (PCSK9) reduce low-density lipoprotein cholesterol (LDLc) by 55%, regardless of baseline treatments, and are supposed to have a homogenous effect. We tested possible gender differences in a large multicenter registry of real-world patients treated with PCSK9 inhibitors.

Methods: Multicentre and retrospective registry of patients treated with PCSK9 inhibitors from 14 different hospitals from Spain. Before and on-treatment LDLc cholesterol was recorded as well as medical treatments, clinical indication and clinical features.

Results: A total of 562 patients were analysed, mean age 60.2 (9.6) years and 79.2% males. Most frequent indication for PCSK9 inhibitor treatment was established cardiovascular disease (CVD) with LDLc >100 mg/dl (58.1%) followed by familial hypercholesterolemia (23.4%) and statin intolerance (18.5%). Indications other than CVD were more frequent in women (53.3% vs. 39.1%; p=0.03). Women were more frequently ezetimibe (67.5% vs. 50.6%; p=0.001) before PCSK9 treatment; although no gender differences in statin use was observed (78.6% vs. 83.6%; p=0.93) in the whole cohort it was significantly lower in patients with coronary heart disease (91.4% vs. 98.9%; p=0.005). Before treatment LDLc was 148.7 (50.1) mg/dl and it was higher women vs. men (160.3 (59.3) vs. 145.6 (47.0); p=0.005). Evolocumab was initiated in 318 (56.6%) patients; 229 (40.7%) alirocumab 75 mg and 15 (2.7%) alirocumab 150 mg. No gender differences in PCSK9 inhibitors drug or dose were observed.

Median time to second blood determination were 187.5 (IQR 101–242) days. Mean on-treatment LDLc was 66.7 (46.4) mg/dl and it was also higher in women vs. men (84.4 (58.6) vs. 61.9 (41.3); p<0.001). Mean LDLc reduction was 54.7% but it was higher in men as compared to women (57.0% vs. 46.1%; p=0.0003). Higher LDLc reductions were also observed in patients with CVD as compared to the other 2 indications (57.1% vs. 47.3%; p=0.002). Moreover, LDLc reduction with PCSK9 inhibitors treatment was also higher in men vs women among patients with CVD (58.9% vs. 48.0%; p=0.04)

Conclusions: This multicentre and retrospective registry of real-world patients treated with PCSK9 inhibitors highlights significant gender differences in LDLc reduction.



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