PEARL, a non-interventional study on real-world use of alirocumab in German clinical practice: results in patients with and without diabetes

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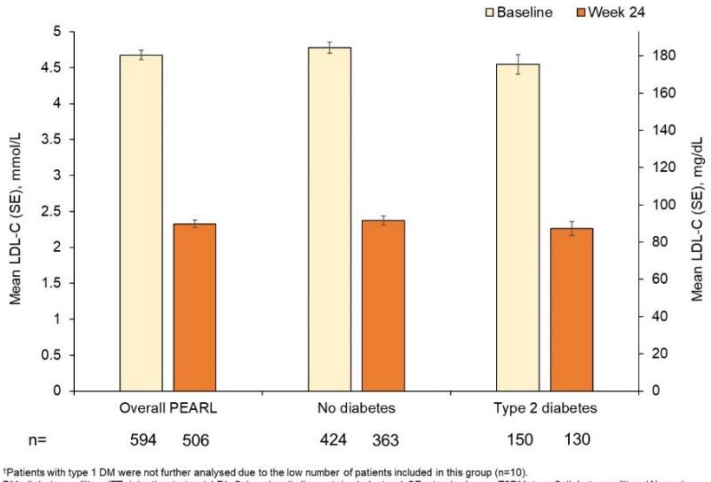
Background and aims: The updated 2017 ESC/EAS Task Force guidance recommends that PCSK9 inhibitors should be considered for patients with atherosclerotic cardiovascular (CV) disease who are not adequately treated with maximally tolerated statins. PEARL assessed efficacy and safety of the PCSK9 inhibitor alirocumab (ALI) in patients with hypercholesterolaemia in a real-world setting. Here, we present data from the overall PEARL population and those with no diabetes mellitus (DM) or type 2 DM (T2DM).
Materials and methods: PEARL was an open, prospective, multicentre, non-interventional study conducted in Germany. Enrolled patients (n=619) should have LDL-C >1.81 or 2.59 mmol/L (70 or 100 mg/dL; depending on CV risk) despite maximally tolerated non-ALI lipid-lowering therapies (LLTs), and subsequently received ≥1 dose of ALI 75 or 150 mg every 2 weeks (Q2W) prior to enrolment. All patients received ALI; dose was adjusted based on physicians' clinical judgment throughout (duration: 24 weeks). The primary efficacy endpoint was LDL-C reduction from baseline (LDL-C prior to ALI therapy) to Week (W)24.
Results: In total, 27.6% of patients had DM, of whom 5.9% had type 1 DM (not further discussed) and 91.1% T2DM. Overall, 45.3% were statin intolerant (unable to tolerate ≥2 statins) and 27.6% were partially statin intolerant (unable to tolerate sufficient statin dose to reach LDL-C <1.81 or 2.59 mmol/L, depending on CV risk). Before the start of ALI therapy, 23.5% of patients were on statin only, 47.9% were on LLT (ezetimibe, fibrates and/or bile acid sequestrants) combined with statin, 10.1% were on LLT combination therapy without statin therapy and 1.8% were on other LLTs (no information available: 16.7%). A similar distribution was seen in patients with T2DM. Overall, initial ALI dose was 75 mg Q2W in 72.9% of patients and 150 mg Q2W in 24.5%, comparable with patients with no DM (72.8% and 24.9%) and with T2DM (73.4% and 24.0%). LDL-C levels at baseline and W24 are shown in Figure 1. Least-squares mean percent change from baseline to W24 in LDL-C was -48.6% for all patients, -49.0% for those with no DM and -47.4% for those with T2DM. During the study, 20.4% of all patients received a dose increase from 75 mg to 150 mg Q2W and 4.0% had a dose decrease from 150 mg to 75 mg Q2W. Corresponding percentages were 17.8% and 1.9% for patients with no DM and 28.1% and 0.7% for those with T2DM. In patients with DM, mean (SD) HbA1c level was 6.9 (1.2)% at baseline and 6.7 (1.0)% at W24. Overall, adverse events were reported in 10.3% of patients, with myalgia (7.3%) the most common; 13.4% of patients discontinued therapy.
Conclusion: PEARL showed that, in a real-world setting, ALI reduced LDL-C levels in patients with high CV risk, including those with no DM and with T2DM. ALI efficacy and safety were consistent with those observed in the ODYSSEY Phase 3 programme.

Figure 1. Mean LDL-C at baseline and W24 for the overall PEARL study population, patients with no DM and patients with T2DM† (ITT analysis)



†Patients with type 1 DM were not further analysed due to the low number of patients included in this group (n=10).
DM, diabetes mellitus; ITT, intention-to-treat; LDL-C, low-density lipoprotein cholesterol; SE, standard error; T2DM, type 2 diabetes mellitus; W, week.

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