Pilot study: The LIPL-PLATELET study postprandial LIPid paneLs and PLATELET activity in coronary heart disease after treatment with PCSK9-inhibitors

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Reports about a pleiotropic potential of pro-protein convertase subtilisin/kexin type 9 inhibitor are scarce. This hypothesis-generating study investigates the platelet reactivity after standardized oral fat tolerance testing (OFTT) under an optimized lipid-lowering therapy (statin plus ezetimibe) alone and during the add-on treatment with the alirocumab.

We investigated ten patients with the chronic coronary syndrome (CCS). Lipid variables and markers of platelet function were assessed during the fasting state and 3 and 5 hours after OFTT using a milkshake with 90g of fat. Measurements were performed in the same CCS patients under dual lipid-lowering therapy (DLLT) alone and after three months of add-on therapy with alirocumab.

Postprandial inflammatory reaction did not change, irrespective of alirocumab. Neutrophile to lymphocyte ratio increased during the OFTT more significantly when on dual lipid-lowering therapy (p=0.021). The multiplate electrode aggregometry test with ASPI reagents (p=0.037) showed a paradoxically higher platelet reactivity five hours after OFTT with the addition of alirocumab compared to the DLLT only. Platelet reactivity remained unchanged during OFTT in CCS patients before or after alirocumab therapy.

Altogether, alirocumab showed a trend of decreased postprandial inflammation and an increase in platelet reactivity.