Abstract: P6601
Low miR-19b-1-5p expression in ACS patients is related to aspirin resistance and major adverse cardio-cerebrovascular event (MACCE)

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Topic(s):
Thrombosis, Platelets, and Coagulation

Citation:
European Heart Journal (2019) 40 (Supplement), 4195

Aim: Despite aspirin therapy, acute coronary syndrome (ACS) patients are at risk of developing re-events owing to the aspirin resistance. This study sought to explore the possibility of utilizing miR-19b-1-5p as a suitable biomarker for aspirin resistance and future major adverse cardio-cerebrovascular (MACCE) events in the ACS patients.

Methods: Buffy coat from ACS (n=945) patients was used to measure the miR-19b-1-5p expression by RT-qPCR and Platelets function was determined by Multiplate® aggregometry testing. Furthermore, MACCE was collected over a mean follow-up time of 1.01±0.43 years. Linear regression concerning the relationship between miR-19b-1-5p expression and Multiplate® data and cox regression concerning MACCE were used for the analysis, to be able to adjust for confounding.

Results: Low miR-19b-1-5p expression was found to be related to aspirin resistance as could be observed from sustained platelet aggregation in the presence of aspirin (-Log-miR-19b-1-5p, (B (95% CI); 41.51 (5.09–77.93); p<0.05), even after adjusting for several confounders. The Cox regression analysis, showed that with lower miR-19b-1-5p expression, was independently associated to a higher risk of MACCE (-Log-miR-19b-1-5p, (HR (95% CI); 2.41 (1.51–3.84)); p<0.05). Furthermore, both a sustained platelet aggregation on aspirin and lower miR-19b-1-5p expression, were related to an increased leukocyte count (B (95% CI); 3.85 (0.95–6.75) for platelet aggregation and 1.44 (0.41–2.46), for -Log-miR-19b-1-5p; p<0.05).

Conclusions: Lower miR-19b-1-5p expression was found to be associated with sustained platelet aggregation on aspirin, an increased leucocyte count and the risk of MACCE in ACS patients. Therefore, miR-19b-1-5p could be a suitable marker for aspirin resistance and might predict future MACCE in ACS patients.