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IDENTIFICATION OF NOVEL BIOMARKERS ASSOCIATED WITH HIGH ON-ASPIRIN PLATELET REACTIVITY IN CHINESE ELDERLY PATIENTS

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Aspirin is the most widely used antiplatelet agent, however, some patients exhibit "resistance" to aspirin, termed "high on-aspirin platelet reactivity (HAPR)". It has been reported HAPR significantly increased risk of ischemic events. Several studies have used expression profiling of blood RNA by microarray to identify novel biomarkers and potential therapeutic targets for HAPR patients. However, evidence in Chinese patients is still lacking in this area. Our study on 34 RNA-sequenced peripheral blood samples from elderly patients with coronary artery disease (CAD) on regular aspirin treatment, 18 of them had recurrent cardiovascular events (CVE) while the other 16 were stable. A total of 56751 transcripts were analyzed by an unpaired t-test ($p<0.05$) and further filtered for a fold-change of >1.5 between two groups, yielding 39 differentially expressed transcripts (DET). Among the 39 DETs, we selected 7 transcripts to further validate in a large-scale patients (n=88) using real time quantitative PCR. The mean age of these 88 patients was 75.60±9.99 years old. Among them, HAPR patients showed no significant differences in terms of co-morbidities and combined drugs, while the relative expression of lysophosphatidic acid receptor 3 (*LPAR3*) was significantly decreasing when compared with low on-aspirin platelet reactivity (LAPR) patients ($p=0.022$). The area under ROC curve was 0.759 for *LPAR3* to diagnose HAPR ($p=0.011$). Logistic regression analysis showed low-density lipoprotein cholesterol (LDL-C) was independent risk factor for HAPR (HR=5.066, $p=0.013$), while β-blocker might be protective factor for HAPR (HR=0.215, $p=0.019$). In conclusion, our study investigated circulating transcripts associated with HAPR in Chinese elderly patients with CAD and demonstrated that *LPAR3* might be potential biomarker for HAPR. Nevertheless, larger-scale and long-term studies are still needed.

Biography

Weimei Ou has completed her Master degree from Peking University and pursuing PhD at Geriatrics Department, Peking University First Hospital, Peking University. She has published 4 papers in reputed journals and has been serving as a Peer Reviewer of several journals. She has participated in translating two professional English books into Chinese. She is enthusiastic about scientific research and has actively taken part in many academic activities, such as academic speech contest, workshop, and conference and so on. She is the Vice Minister of Inline Ministry, a department of Graduate Student Union.

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