THE IVS1–397T>C ESTROGEN RECEPTOR α POLYMORPHISM IS RELATED TO DIFFERENT INFLAMMATORY RESPONSE IN THE CORONARY HEART DISEASE POSTMENOPAUSAL WOMEN

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Objective: The IVS1-397T>C polymorphism appears to possess a wide functional significance in postmenopausal women. An increased cardiovascular risk has been ascribed to the IVS1-397CC genotype. Design: Aim of our study was to test whether the IVS1-397CC genotype may be associated with a stronger inflammatory response in coronary heart disease (CHD) postmenopausal women in relation to T allele carriers. Methods: Eighty postmenopausal women scheduled for first time elective coronary artery bypass grafting (CABG) were enrolled into the study. The blood monocyte (with the inflammatory CD14+CD16+ subset) counts as well as the capacity of whole blood cell cultures (WBCC) to secrete Tumor Necrosis Factor α (TNFα) and Interleukin 6 (IL6) in vitro were approved as inflammation indicators. Results: The absolute values and percentages of monocytes and their inflammatory CD14+CD16+ subset were higher in the IVS1-397T allele carriers than in CC genotype patients. Similarly, WBCC of the CT and TT genotypes exhibited higher LPS-induced IL6 and TNFα in vitro secretion in comparison with that of CC genotype. A 28 months post-CABG follow-up disclosed that patients with the IVS1-397TT genotype had more frequently suffered from stroke, cardiovascular death and were more often readmitted to the hospital for recurrent angina pectoris. Fewer of the TT genotype patients experienced subjective symptoms of health improvement. Conclusions: Summarizing, we found that the IVS1-397T>C polymorphism may differentiate the CHD postmenopausal women with respect to inflammatory response and CHD severity. The TT genotype patients appeared to be characterized by a stronger inflammatory response and more serious outcome of the CHD.