

# Genetic variant predicts poor response to bypass surgery

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A variant of the gene for the inflammatory modulator interleukin (IL)-18 has been found to be associated with a prolonged ICU stay after cardiopulmonary bypass (CPB) surgery. Research published in BioMed Central's open access journal *Critical Care* links the TT genotype of the IL-18 9545 T/G polymorphism with a larger pro-inflammatory response.

Professor Keith Walley worked with a team of researchers from the University of British Columbia, Canada, to investigate associations between the IL-18 haplotype and post-surgery inflammatory phenotype in 658 patients undergoing CPB. He said, "Inflammatory gene polymorphisms have been linked to the intensity of the post-operative inflammatory response and to clinical outcomes after CPB surgery. Here, we've found an IL-18 variant that is associated with increased IL-18 levels and adverse outcomes."

IL-18 is known to increase levels of the pro-inflammatory cytokine TNF- $\alpha$ , while reducing levels of the anti-inflammatory IL-10. The TT genotype of the IL-18 9545 T/G polymorphism is believed by the authors to cause an increase in expression of IL-18. Their research confirmed this mechanism and, according to Walley, "The resulting inflammatory response may account for the adverse clinical outcomes associated with the TT genotype post-surgery".

In the cohort studied, the TT genotype was carried by 58% of the subjects, 34% were GT and 8% were GG. Apart from a small difference

in body mass index, there were no significant differences in baseline characteristics between the groups.

Reference: Novel polymorphism of interleukin-18 associated with greater inflammation after cardiac surgery David M Shaw, Ainsley M Sutherland, James A Russell, Samuel V Lichtenstein and Keith R Walley, *Critical Care* (in press), [ccforum.com/](http://ccforum.com/)

Source: BioMed Central

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