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Autor(en) des Beitrags: Gaudino, M; Di Castelnuovo, A; Zamparelli, R; Andreotti, F; Burzotta, F; Iacoviello, L; Glieca, F; Alessandrini, F; Nasso, G; Donati, MB; Maseri, A; Schiavello, R; Possati, G

Titel des Beitrags: Genetic control of postoperative systemic inflammatory reaction and pulmonary and renal complications after coronary artery surgery.

Abstract: BACKGROUND: Although some data suggest that the individual genetic predisposition for developing major or minor degrees of postoperative systemic inflammatory reaction may influence postoperative morbidity, this hypothesis has not been clinically tested to date. Methods and results The -174 G/C polymorphism of the promoter of the interleukin 6 gene was determined preoperatively in 111 consecutive patients submitted to primary isolated coronary artery bypass. The results of the genetic analysis were then correlated with the postoperative interleukin 6 levels and the development of postoperative renal and pulmonary complications. G homozygotes had significantly higher interleukin 6 levels postoperatively (P<.0001 for the difference between areas under the curve). These patients also had worse postoperative pulmonary and renal function. The mean perioperative difference in serum creatinine, potassium, and nitrogen was 0.82 +/- 0.34, 0.99 +/- 0.44, and 10.1 +/- 7.8 mg/dL versus 0.18 +/- 0.14, 0.15 +/- 0.48, and 2.6 +/- 4.1 mg/dL for GG versus non-GG carriers (P<.0001), respectively. The mean respiratory index at 6 and 12 hours was 2.9 +/- 0.8 and 2.8 +/- 0.3 versus 2.1 +/- 0.5 and 1.3 +/- 0.1, respectively (P<.0001). The mean duration of mechanical ventilation was 22.5 +/- 2.1 versus 12.7 +/- 6.7 hours.
A correlation was found between postoperative interleukin 6 levels and renal and pulmonary complications. CONCLUSION: The interleukin 6 -174 G/C polymorphism modulates postoperative interleukin 6 levels and is associated with the degree of postoperative renal and pulmonary dysfunction and in-hospital stay after coronary surgery.