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Religious Struggle, Coping, and Plasma Interleukin-6 in Middle-aged and Older Patients Prior to Cardiac Surgery

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Abstract

Background: Plasma levels of cytokines have been associated with adverse cardiac outcomes and with negative emotions in the medical and psychosomatic literature, respectively. Research on faith-health linkage has focus on positive outcomes. Few researchers have investigated the association between these psychobehavioral factors and cytokines in cardiac patients. To meet gaps, this study explored the potential impact of religious struggle and general coping strategies on Interleukin-6 (IL-6) in middle-aged and older patients undergoing cardiac surgery, controlling for key medical and psychological correlates in multivariate analysis. Methods: 235 patients (mean age 61) were recruited at the University of Michigan Health Systems. Psychobehavioral factors were obtained two days before operation, using standardized instruments. Medical information was obtained from the hospital's Society of Thoracic Surgeons' Adult Cardiac Database (STS). Blood samples were drawn on the morning of operation for the measurement of IL-6. Variables of major interest and significant correlates were analyzed through multiple regression analysis following a pre-planned sequence. Results: Religious struggle (p = .011), behavioral coping (p = .013), and medical correlates, such as left ventricular ejection fraction, were positively associated with plasma IL-6. The main pattern for coping factors maintained in alternative models, though the magnitude of medical covariates was marginalized. No demographics and mood state measures were influential. Conclusion: Faith-based struggle and behavioral coping strategy may vary with pre-operative plasma levels of IL-6. The clinical and pathophysiological significance of this association, however, remains to be determined. The findings also underline the importance of controlling objective medical indicators in analyzing the relationship between psychobehavioral factors and biomarkers.