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**“Peritoneal Fluid Cytokine Levels in Patients Undergoing Damage Control Laparotomy Differ by Race”**

**Introduction:** The peritoneum plays a key role in the inflammatory response to abdominal injury. Cytokines are signaling proteins that help mediate wound healing, inflammation, and immune responses to injury. For trauma patients in extremis, the role of the peritoneum remains poorly studied. Specifically, outcomes for high-risk populations and the corresponding peritoneal environment are not well-studied. The objective of this study was to investigate the differences in peritoneal cytokine profiles between African American and white trauma patients undergoing damage control laparotomies.

**Methods:** Peritoneal fluid samples were collected from adult trauma patients undergoing damage control laparotomy over a one-year period at a Level 1 trauma center. Baseline demographic data were collected. Peritoneal fluid samples were collected at the initial surgery and at take backs. The cytokine concentrations were measured using a 10-analyte multiplex assay. Univariate analyses were performed.

**Results:** Twenty total participants were enrolled in the study which included fifteen African American (75%) and five white (25%) patients. African American trauma patients undergoing laparotomy were significantly younger ( $p = 0.006$ ). African American trauma patients were also significantly more likely to have sustained a penetrating trauma ( $p = 0.03$ ). Injury severity scores (ISS) were not significantly different between the two groups ( $p = 0.66$ ). There were significantly higher concentrations of IL-1- $\beta$  ( $p = 0.01$ ) and VEGF ( $p = 0.03$ ) in African American trauma patients compared to white trauma patients.

**Discussion:** Significant differences in the peritoneal concentrations of the cytokines IL-1- $\beta$  and VEGF were found between African American and white trauma patients. These differences may suggest a variation in inflammatory and repair responses of the body between the two groups, which may lead to different clinical outcomes. Further research will investigate the role of age or trauma type on peritoneal cytokine variation. Future research efforts will increase sample size and evaluate different populations.