

A light in the dark: Pancreatic Stone Protein doesn't seem to be affected by immunosuppressive induction therapy in cardio-surgery patients

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Introduction

Pancreatic stone protein (PSP) is indeed emerging as a promising biomarker for diagnosing infections, particularly in critically ill patients. Research has demonstrated that PSP levels can rise in response to infections especially in settings such as intensive care units (ICUs). The aim of this experimental study was to evaluate the role and potential of PSP as a marker of sepsis in heart transplant recipients and cardiac surgery patients by comparing it with traditional inflammation markers.

Methods

A total of 33 patients were enrolled, of whom 6 underwent heart transplantation (TRAP group) and 27 underwent cardiac surgery (NTRP group). Patient data were collected according to the following Timeline: Preoperative data; During surgery; On the first postoperative day; Every three days thereafter (fourth, seventh, tenth day); At delivery.

Results

In our center, the immunosuppressive protocol includes induction with anti-thymocyte globulins in all recipients. A significant increase in PCT in the post-operative period has been observed related to thymoglobulin therapy and not related to ongoing infection. It is also known that the diagnostic accuracy of PCT is lower in immunosuppressed and neutropenic patients. If, however, PSP were to prove, as it seems, a biomarker not influenced by immunosuppressive therapy (there are no differences in trend in the TRAP and NTRP groups), it could represent a good weapon in the early detection of sepsis in transplant patients. The leukocyte count is unreliable in transplant patients in terms of early detection of sepsis, since it is a value "dirtied" by immunosuppressive therapy, (Graph 1).

Conclusion

Traditional inflammation indices (PCT, PCR, WBC) are altered by immunosuppressive induction therapy, making them deficient in terms of their interpretation in terms of early detection of infection. PSP, having a comparable trend between the TRAP and NTRP groups, does not seem to be affected by this influence.

Graph 1 – Trend of sepsis biomarker in critically ill patient submitted to cardiac surgery (Transplant and not transplant)

