

## RESILIENT MESHES: EXPLORING POLY-4-HYDROXYBUTYRATE IN URGENT ABDOMINAL REPAIRS.

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### AIM:

Repairing abdominal wall defects during emergency surgery poses considerable challenges, stemming from patients' critical conditions, the demanding surgical environment, and the heightened likelihood of postoperative adverse events. Long-term absorbable poly-4-hydroxybutyrate meshes have been identified as a potential solution to reduce the incidence of infection and surgical site complications. Nevertheless, data regarding their performance under emergency conditions remain limited.

### MATERIALS AND METHODS:

This retrospective observational analysis encompassed patients treated with Phasix<sup>TM</sup> meshes during emergency surgeries from 2018 to 2024. Key parameters, including demographic profiles, perioperative variables, and both immediate and extended postoperative outcomes (such as surgical site occurrences, infection rates, hernia recurrence, and mesh explantation) were extracted from anonymized electronic health records. The dataset underwent descriptive and comparative statistical evaluation.



### OUTCOMES:

Between February 2018 and December 2024, 97 patients underwent surgical intervention utilizing Phasix<sup>TM</sup> prostheses within the General and Digestive Surgery, Department at Hospital Clínico San Carlos. Of these, five patients (60% female, 40% male, median age 59 years) underwent emergency procedures. Blunt abdominal trauma accounted for the primary indication (40%), and surgeries were predominantly classified as contaminated (40%). Supra-aponeurotic placement of the mesh was most frequent (60%). The predominant complication observed was surgical site occurrence, without any documented cases requiring mesh explantation. One patient exhibited hernia recurrence three years postoperatively following supra-aponeurotic implantation.

### CONCLUSIONS:

Poly-4-hydroxybutyrate meshes are a valuable alternative for managing abdominal wall defects in emergency surgeries, demonstrating favorable recurrence rates and the absence of explant requirements. However, the study's small sample size limits broader applicability, necessitating further exploration.