**Abstract for the submission to the STSA 71st Annual Meeting**

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General rules:

* Structured abstract.
* There should be no name of the products/company included in the title and in the abstract.
* Word Limit: 400

**Prospective Case-Controlled Analysis of The Hemostatic Benefits of an Absorbable Plant Based Microporous Polysaccharide Powder in Redo Cardiac Surgery**

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**Objectives:**

Redo cardiac surgeries are becoming more commonly recommended due to improved medical care and technological advances. Post-operative bleeding is a significant risk factor following redo cardiac surgeries which may lead to worsening patient outcomes such as increased lengths of stay and mortality.

An absorbable hemostatic plant based microporous polysaccharide powder (PSP) was FDA approved for wound bleeding and has been used in primary cardiac surgeries. Minimal literature exists with the use of PSP in redo cardiac surgeries. This study aimed to directly compare the use of PSP in prospective cohort with retrospective cohort of patients with no hemostatic agents used undergoing planned non-emergent redo sternotomy cardiac surgery.

**Methods:**

The prospective participants with planned non-emergent redo sternotomy cardiac surgeries were consented until reaching 25 consecutive patients between June 2021 and January 2023. 25 retrospective participants were selected from the historic cohort of a total of 46 redo cardiac surgeries completed in 2019 and 2020. We compared transfusion use at various intervals within the first 24 hours post-surgery (packed red blood cells, platelets, and fresh frozen plasma); chest tube outputs in the first 12, 24 and 48 hours; and occurrence of reoperation due to suspected bleeding. Patients’ operative characteristics were also the subject of the analysis. Descriptive statistics, Mann Whitney U and Chi-Square analyses were used.

**Results:**

The total sample consisted of 51 participants (26 retrospective participants and 25 prospective participants), with a mean age of 68 ± 11 years, 73% male (n=37) and 51% with congestive heart failure (n=26). When evaluating samples individually, there was a higher average use of packed red blood cells, fresh frozen plasma and platelets given in the first 4 hours post-surgery in the retrospective cohort, compared to the PSP cohort. When comparing cohorts together, there were statistically significant lower amounts of chest tube outputs (CTO) in the first 12 hours and the 12–24-hour intervals with less CTO in the PSP cohort (520(317.5) vs 675(418.75), p=0.028; 820(417.5) vs 980(641.3), p=0.044). While not reaching statistical significance, there were 3 reoperations in the retrospective cohort due to suspected bleeding compared to no reoperations in the PSP cohort (p=0.235).

**Conclusion:**

This study highlights less transfusions, decreased chest tube drainage, and decreased need for reoperation in comparison to historical controls when using PSP. The use of PSP in the redo cardiac surgical population should be considered because of the demonstrated decrease the risk of bleeding and improve overall patient outcomes.

Abstract word count: 397