Peer Review File

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Reviewer A

1) The technology, while new, isn't novel. It's expensive, so unlikely to be readily accessible to most.
    a. Reply: The use of this technology has not been explored in robotic prostatectomy, and so its use in this field is in this way "novel", but we agree that this can be changed.
    b. Change in text: We have changed the word "novel" to "new", and removed "novel" from the title. (Page1/Line2)
    c. Response: We agree, the technology is expensive, but in our facility is of a similar cost to other options as we have included in our table.
    d. Change in text: We have included a paragraph considering cost (Page12/line13-24)
2) There are no functional outcomes to suggest whether purastat leads to preserved erectile function.
    a. Reply: Yes, we agree that this needs to be addressed
    b. Changes in text: We have added data around IPSS, IIEF scores and continence to clarify functional outcomes. (page11/line1-19). We have also made Table 2.
3) Additionally, how significant is the degree of bleeding of the NVBs to warrant trending Hgb as an appropriate marker for purastat efficacy? In other words, the NVBs aren't the major source of postop bleeding; if there is any change in Hgb postop, it is unlikely due to the bundles, and therefore not a good surrogate marker for purastat efficacy.
    a. Reply: We agree. There is no specific way to tell the source of postoperative bleeding. Therefore, Hb is used as the closest surrogate marker. We have compared our results to studies also using Hb as the surrogate marker with different haemostatic agents.
    b. Changes in text: Page10/line18-20
4) Is the purastat FDA approved?
    a. Reply: In Australia, our governing body is the Therapeutics Good Administration (TGA). Purastat has TGA approval for use in our context.
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    b. Changes in text: We have included this clarification within our introduction. Page5/line17-19

5) Has it been used on nerve tissue? That should be commented on. All I see is use for GI anastomoses.
    a. Reply: Yes, it has been used on nerves in the context of thyroid and parathyroid surgery and agree that this should be mentioned and referenced
    b. Changes in text: Clarification that Purastat has been used previously on nervous tissue with proper referencing. Page5/line16-17
6) From a practical standpoint, while the clarity of the hemostatic agent is described as a positive, I would think it's frustrating not being able to quantify any tangible benefit to justify the added cost.
    a. Reply: In Australia, and in our centre, the cost for Purastat is not significantly more than alternatives, and so clarity benefits and similar perioperative outcomes more significant
    b. Changes in text: Price comparison is explored further in the discussion. Page 12/line13-24

Reviewer B

In this report the authors report early experience of using a hemostatic agent (Purastat) at the conclusion of RARP. They included 25 patients, and followed them for 1 year. I would encourage the authors to address the following comments:

1- How many RARP are performed at the authors institution per year? what was their bleeding/transfusion rate without HA?
    a. Reply: Total RARP a year: average 78 a year. Transfusion rate 2.6%. No RARP done without HA at our centre.
    b. Changes in text: We have included this information in the discussion. Page 10/line15-17
2- State in the methodology that you follow STROBE guidelines.
    a. Reply: yes, good idea
    b. Changes in text: statement in methods that STROBE guidelines were followed. Page7/line12
3- Was the qualitative score validated previously? If not, how was this score was developed and validated?
    a. Reply: No validated questionnaire for the evaluation of haemostatic agents for surgeons and assistant currently exists. We therefore developed this questionnaire to cover the important characteristics of haemostatic agents based on our clinical experience and consultation with surgical colleagues. This pilot study was the means of validating

the score.

b. Changes in text: We have added a paragraph in the discussion to consider our questionnaire and how it needs to be improved for further studies. Page12/line5-10

4- How do you justify additional cost of HA? What is the number needed to be treated to prevent one transfusion?

a. Reply: The cost of Purastat is comparable/favourable to other agents at our centre.

b. Changes in text: We have included paragraph on cost consideration. Page12/line13-24. We have also considered the local transfusion rates. Page10/line15-17.

Reviewer C

In this observational study titled "A Novel Transparent Synthetic Peptide Hydrogel as a Haemostatic Agent in Athermal Nerve Sparing Robot Assisted Radical Prostatectomy," the authors explore the application of PuraStat®, a novel synthetic haemostatic agent, in the context of robotic-assisted radical prostatectomy (RARP). The study presents promising results in terms of perioperative bleeding control and user satisfaction with PuraStat®.

The abstract outlines that PuraStat® effectively served as the primary haemostatic agent during RARP procedures, with minimal complications. The absence of transfusions and low postoperative complications are noteworthy. Moreover, the study highlights that the outcomes are comparable to those reported in other published series, suggesting the efficacy of PuraStat® in maintaining haemostasis during RARP.
However, a critical point to consider, is the absence of long-term follow-up data to assess the durability of PuraStat®'s effect, particularly in the context of nerve-sparing procedures. This is a crucial aspect, as the application of the material on the neurovascular bundle raises questions about its potential impact on long-term potency and functional outcomes for patients. Therefore, while the study demonstrates promising short-term results, further research with extended follow-up periods is warranted to evaluate the material's impact on long-term functional outcomes, especially in the sensitive context of nerve-sparing surgeries. This aspect could be a focal point for future investigations in this area.

- Reply: We agree. Purastat's safety, long-term potency and urinary outcomes are where the real benefit could be.

- Changes in text: We have added data on our erectile and urinary function outcomes to the results and discussion. Page11/line1-19

Reviewer D

I appreciate the effort and insight presented in your article.

Introduction:

The introduction is smoothly written and adequately addresses the topic. However, it might be beneficial to include additional information on how the use of hemostatic agents like Purastat could potentially contribute to favorable postoperative recovery and functional outcomes.

- Reply: We can certainly include this in the introduction
- Changes in text: We have included a paragraph on the potential for haemostatic agents to contribute positively/or negatively to perioperative and functional outcomes. Page4/line 20-22.

Materials and Methods:

The section on materials and methods appears to be somewhat vague. It is recommended to incorporate a paragraph detailing the characteristics of Purostat, including its chemical and physical properties, preparation methods, and application techniques. Similarly, to what you said about the first console surgeon, it would be useful to specify whether the first assistant responsible for evaluating Purostat's characteristics at the end of each procedure is always the same.

- Reply: We agree that clarification on Purastat's preparation and properties will be helpful for the audience. A brief summary of Purastats properties is included in the introduction, but this can be expounded. Further we can also clarify how assistant data was collected
- Changes in text: An extra paragraph is included regarding Purastats properties. Page5/line5-24. A sentence regarding assistant data is also included. Page7/line5

Results:

The presentation of results is generally well-executed. However, there is a need to clarify the data concerning continence. The reported continence rate of approximately 80% at a mean follow-up of 148 days lacks a precise definition of continence (e.g., pad test, pads per day, social continence).

- Reply: We agree the explanation of our data here is vague, and we have adjusted this to clarify
- Changes in text: We have included pre and postoperative IPSS, IEF scores and a measurement of continence based on pads compared these to other studies. Page11/line1-19

Figures and Tables:

Regarding Figure 1, consider either specifying the components of the applicator within the figure's description or referring to them explicitly in the main text.

- Reply: Thankyou for this advice
- Changes in text: We have included specific components about the applicator and removed the figure as it was not copyright cleared at the time of writing this. page5/line12.

General Observations:

While the article is well-written overall, there are a few specific points I'd like to address to the authors:

1. The rationale behind the potential use of hemostatic agents within neurovascular bundles is intriguing, particularly in minimizing the need for monopolar and bipolar currents during surgery, potentially leading to improved functional outcomes. However, it seems that the benefit, although comparable to other hemostatic agents reported in the literature, might not be sufficiently justified, especially in the absence of a control group.
    a. Reply: We agree. Given that the field of haemostatic agents is RARP is relatively unexplored, this pilot study helps clarify an optimal study design and feasibility.
    b. Changes in text: We have addressed this in the limitations and further study section. Page13/line2-16
2. Additionally, the relatively small sample size restricts a comprehensive evaluation of the hemostatic agent's efficacy.

a. Reply: We agree. Given that the field of haemostatic agents is RARP is relatively unexplored, this pilot study was to help clarify an optimal study design and feasibility.
b. Changes in text: We have addressed this in the limitations and further study section. Page13/line2-16

3. The absence of functional outcome assessments makes the product description somewhat incomplete. Notably, the most significant advantage could lie in the long-term functional improvements rather than solely in the perioperative phase.
    a. Reply: We agree. Purastat's safety, long-term potency and urinary outcomes are where the real benefit could be.
    b. Changes in text: We have added data on our erectile and urinary function outcomes to the results and discussion. Page11/line1-19

Best regards and thank you again for your effort and work

Reviewer E

This study describes the experience of using a hemostatic to minimize the use of thermal or mechanical hemostasis to improve erectile function after RARP.
the aim of the study is not clearly objected.

- Reply: We agree that the objective needs to be more clearly stated
- Changes in text: We have edited and clarified our objective. Page5/line22-24

Abstract contains the key information and is well structured.
Introduction is well written. Methods section describes in detail the structure of the study and the statistical tools that were used.
Results: potenz status in the long term is missing.

- Reply: We agree. Purastat's safety, long-term potency and urinary outcomes are where the real benefit could be.
- Changes in text: We have added data on our erectile and urinary function outcomes to the results and discussion. Page11/line1-19

and Discussion are well written and include important studies of the subject in the current literature. Study limitations were not taken into account: small sample size, retrospective design...costes?

- Reply: we acknowledge the limitations that you have raised
- Changes in text: we have adjusted out limitations section. Page13/line2-16