Nasal Puragel Application Decreases Epistaxis Severity Scores in Adults with Hereditary Hemorrhagic Telangiectasia

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Abstract

Introduction: More than 90% of adults with hereditary hemorrhagic telangiectasia (HHT) experience epistaxis, which can be recurrent and cause significant morbidity. Puragel is a self-assembling RADA-16 oligopeptide gel approved by the FDA for hemostasis and wound healing. In this cohort study, we determined the effectiveness of nasal Puragel application in controlling HHT-related epistaxis.

Methods: A retrospective chart review was done of 18 adult patients (age ≥18) with HHT according to the Curaçao criteria who received nasal Puragel application at the University of Florida's Health Ear, Nose and Throat clinic. No other change in treatment was allowed. Pre and post Epistaxis Severity Scores (ESS) were collected to determine response to Puragel.

Results: Out of the 30 identified patients, 18 received Puragel without other treatment and had recorded post-treatment ESS. ESS decreased by an average of 2.59 points (range: -0.57 to 5.32), 3.6 times more than the minimal clinically important difference (MCID: 0.71) for ESS in HHT. One patient had a pre-post ESS less than the MCID, which was due to recurrence after complete remission of symptoms for three weeks. No bleeding, pain, or allergic reactions occurred due to the application. Several patients reported mild nasal congestion.

Conclusion: Puragel can be considered as an epistaxis treatment modality for HHT patients. Advantages of this treatment strategy include minimal side effects and ease of application that does not require the operating suite.

Methods

Patient Inclusion and Exclusion Criteria:
A retrospective chart review was done of 30 adult patients within the University of Florida Health system.

Inclusion criteria included adult patients (age≥ 18) with genetically or clinically confirmed diagnosis of HHT. Exclusion criteria included patients younger than 18 years old, patients without a definite diagnosis of HHT, those without post-ESS scores available, and those who received concomitant HHT treatments with Puragel (e.g. sclerotherapy).

Data Collection and Analysis:
Data was collected from EPIC on the following:

- Pre and post-treatment ESS
- Any adverse events or side effects from topical Puragel application

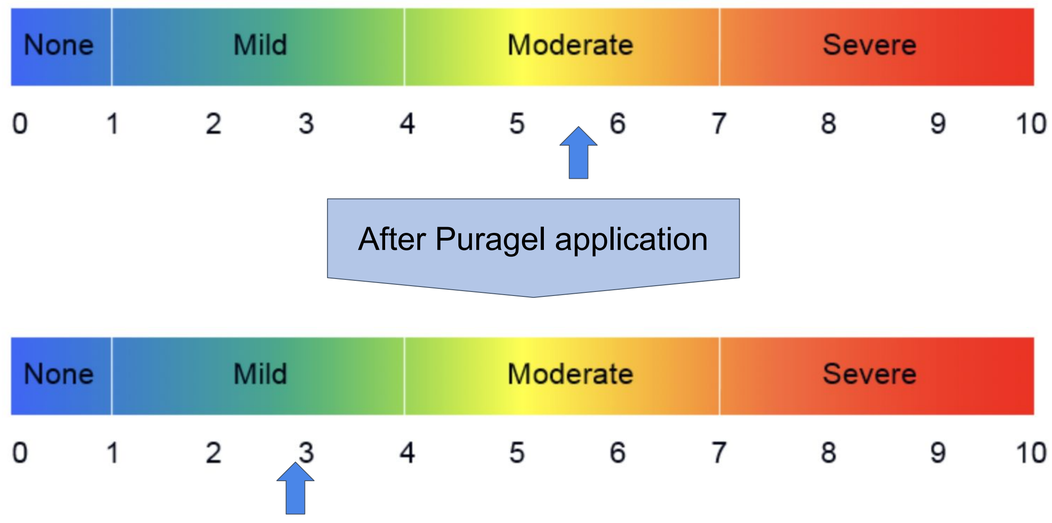
Demographics

Demographics of the cohort are summarized below.

Demographics:		Cohort (n=18)
Age mean [SD]		57.17 [15.37]
Race N (%)	White	15 (83.3%)
	Black	1 (5.6%)
	Other	2 (11.1%)
Gender N (%)	Male	10 (55.6%)
	Female	8 (44.4%)

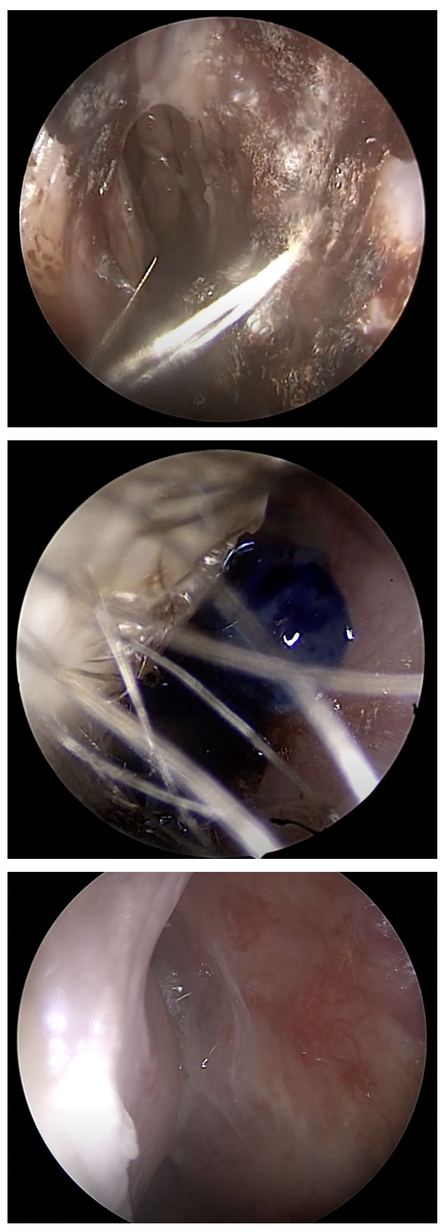
Results

Pre and Post Treatment ESS:



- Average pre-treatment ESS: 5.54
- Average post-treatment ESS: 2.95
- Average decrease in ESS: 2.59 (Range: -0.57 to -5.32)
  - One patient had a change in ESS less than the MCID (0.71), but this was after complete remission of symptoms for 3 weeks

Patient Example:



- ***Before Puragel Application***: This patient's nasal mucosa shows the characteristic crusting and inflammation with HHT-related epistaxis.
- ***Puragel Topical Application***: Puragel delivers its active component (RADA-16, a self-assembling oligopeptide) in a hydrogel (combined with methylene blue for easier visualization).
- ***After Puragel Application***: A few weeks after treatment, the patient's nasal mucosa is well-moisturized and no longer shows inflammation, crusting, or bleeding.

Adverse Events:

- None of the patients had bleeding, pain, or allergic reaction to topical Puragel
- Several patients reported congestion with topical Puragel

Conclusions

- Puragel can be considered as an epistaxis treatment modality for patients with HHT.
- Advantages includes minimal side effects and ease of application that does not require the operating suite.

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Acknowledgments

Research reported in this poster was supported by Research reported in this poster was supported by the Gyllstrom Family Fund for Smell & Taste Research, Wendell N. Jarrard Foundation and National Institutes of Health Awards R01AI134698 (JKM) and R01AI144364 (JKA & CA). The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

Presented at the 15th HHT International Scientific Conference, Mandelieu-la-Napoule, France, October 2024