

Tacrolimus Toothpaste in Management of Oral c-GVHD

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Background

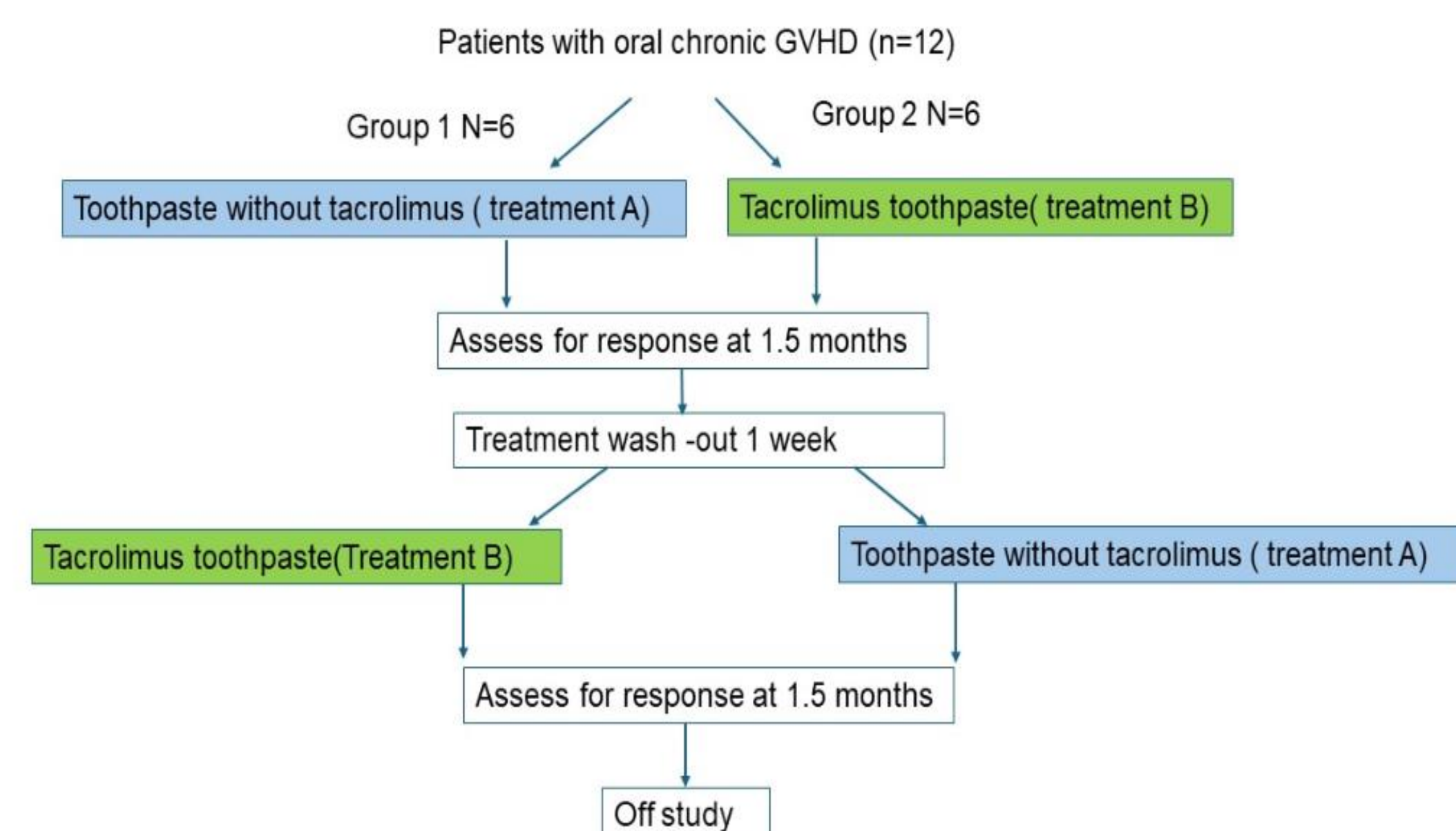
- One of the primary challenges for patients with hematopoietic stem cell transplant (HSCT) is the treatment of chronic graft-versus-host disease (cGVHD) which can impact the lungs, liver, skin, eyes, and gastrointestinal tract. Patients who have poor oral hygiene pre-transplant are at risk for oral complications such as mucositis and oral GVHD.
- Tacrolimus is an FDA-approved immunosuppressive medication which has demonstrated both systemic and topical skin efficacy in the treatment of cGVHD. Herein, with topical application of Tacrolimus on the oral mucosa as a toothpaste, we hope to significantly improve oral cGVHD in our patients, alleviating their debilitating symptoms and improving both their health and their quality of life.

Methods

- IRB approved, prospective pilot study evaluating the efficacy of a topical tacrolimus, toothpaste in reducing symptomology associated with oral cGVHD
- Toothpaste prepared by CCHMC Investigational Drug Services pharmacy in accordance with the recipe provided by AZ Potter's House Rx (Glendale, Az) developed in connection with Professional Compounding Centers for America (Houston, Tx)
- Subjects were directed to stop topical oral directed GVHD therapies
- Subjects were 1-40 years old and underwent bone marrow transplant with a diagnosis of oral cGVHD

Objective

The purpose of this study was to investigate the use of a novel formulation of tacrolimus, as a toothpaste, in a population of patients with oral cGVHD as an adjunctive therapy in addition to standard of care systemic therapy.



Results

Seven patients enrolled with six patients treated
 One patient completed the study as currently designed
 Three withdrew (two symptoms worsened, one changed mind)
 Three converted to open label

ALL patients receiving the placebo got worse
 Two patients got better on tacrolimus toothpaste
 Three patients that converted to open label completed the full six months



Figure 1: Hard palate after 6 weeks of placebo treatment



Figure 2: Hard palate after 6 weeks of tacrolimus toothpaste



Figure 3: Right buccal mucosa at baseline



Figure 4: Right buccal mucosa after 6 weeks of tacrolimus toothpaste



Figure 5: Right buccal mucosa prior to start of open label tacrolimus toothpaste



Figure 6: Left buccal mucosa prior to start of open label tacrolimus toothpaste

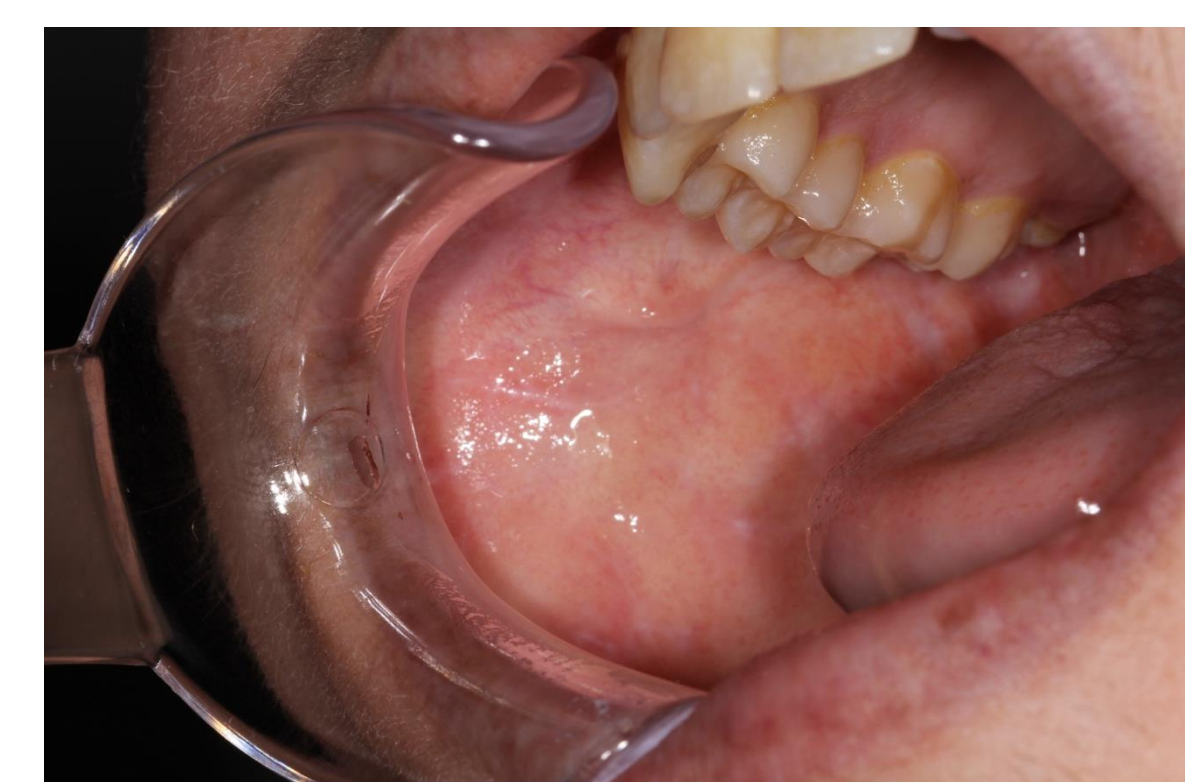


Figure 7: Right buccal mucosa after 6 weeks of open label use of tacrolimus toothpaste



Figure 8: Left buccal mucosa after 6 weeks of open label use of tacrolimus toothpaste

Conclusions

- All open label patients demonstrated satisfaction with Tacrolimus toothpaste and noted improvements in o-GvHD symptoms
- Tacrolimus toothpaste shows promise as an adjunctive therapy for cGVHD, though further research is needed
- Improvements are needed in study design as a double blinded randomized control trial presented difficulties in data collection specifically in scenarios where significant improvement/worsening was observed.
- Improvements on current formulation would be beneficial to include fluoride and increase viscosity

References

