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Abstract Title:	**Phase III Clinical Evaluation of StrataGraft® Skin Tissue for Severe Burns: the First Wound Healing Therapy to Receive FDA's Regenerative Medicine Advanced Therapy Designation**
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Objective:	Upon completion of the lecture, attendees should be better prepared to: • Describe that StrataGraft skin tissue is a full-thickness human skin substitute being developed to reduce or eliminate the need for autograft in the treatment of thermal burns and is the first wound healing product to be designated by the FDA as a Regenerative Medicine Advanced Therapy • Explain that a proof-of-concept clinical trial in subjects with deep partial-thickness burns demonstrated the efficacy and safety of StrataGraft • Classify the phase III study as an open-label, randomized, clinical trial that will enroll approximately 70 adult subjects with thermal burns containing intact dermal elements, and for which surgical excision and autograft placement are clinically indicated
Abstract:	**Introduction:** Annually in the United States, approximately 45,000 people experience burns severe enough to require hospitalization, ~10% to 20% of which require surgical intervention and grafting. The surgical harvest and placement of autograft has long served an important role in the standard of care for serious burns. StrataGraft skin tissue is a living, full-thickness, human skin substitute being developed to reduce or eliminate the need for autograft in the treatment of complex skin defects due to thermal burns. It is the first wound healing product to be designated by the Food and Drug Administration as a Regenerative Medicine Advanced Therapy under the 21st Century Cures Act. This designation offers expedited clinical development and review of this skin substitute for severe burns. A focus of this clinical program is to determine if an off-the-shelf, readily available, allogeneic, human skin substitute can reduce the need for autograft transplantation in patients with deep partial-thickness burns, thereby concomitantly decreasing the overall iatrogenic donor site requiring medical management for pain and the potential for infection and scarring. **Methods**: To evaluate the safety and efficacy of StrataGraft tissue in promotion of autologous tissue regeneration without the need for autograft transplantation, a clinical trial (STRATA2011, NCT01437852) was conducted in burn centers among 30 subjects who were patients with deep partial-thickness burns. Subjects were sequentially enrolled in two cohorts (n=20) allowing an increase in treatment area

(cohort 1, up to 220 cm2; cohort 2, up to 440 cm2) receiving refrigerated StrataGraft skin tissue. A third cohort (n=10) received cryopreserved StrataGraft tissue (up to 440 cm2), which was thawed just prior to grafting. The results of this study informed the design of a phase III study of StrataGraft tissue for use in severe burns. The phase III open-label, controlled, randomized, STRATA2016 study (NCT03005106) is being conducted at approximately 20 burn centers across the United States. Target enrollment is 70 adult subjects with thermal burns containing intact dermal elements, and for which surgical excision and autograft placement are clinically indicated. Each subject will have 2 study wound areas: one burn area will be treated with StrataGraft skin tissue and a second wound area of comparable depth will be treated with harvested autograft.

The 2 co-primary endpoints for the phase III study are:
· The difference in the percent area of the StrataGraft treatment site and harvested autograft (control) treatment site that is autografted by 3 months
· The proportion of subjects achieving durable wound closure of the StrataGraft treatment site at 3 months without autograft placement

Results: In the STRATA2011 clinical study of StrataGraft tissue in deep partial-thickness burns, 27 of 28 per-protocol subjects demonstrated complete wound closure of treatment sites at 3 months and no subjects required autografting by day 28. In a post-hoc analysis of outcomes in cohorts 1/2 stratified by size of treatment area, 92% of subjects in the group treated with <200 cm2 StrataGraft tissue (n=12), and 63% of subjects in the group treated with ≥200 cm2 StrataGraft Tissue (n=8) had wound closure at 3 months without autograft. For the 10 subjects treated with cryopreserved StrataGraft tissue, 9 subjects (90%) had wound closure at 3 months without autograft, regardless of treatment area size; 1 patient receiving cryopreserved StrataGraft tissue was lost to follow-up before 3 months. In subjects treated with either <200 cm2 or ≥200 cm2 StrataGraft Tissue, there was no difference between StrataGraft and autograft treatment sites (by patient and observer scar assessment scale [POSAS] scores) by trained clinical observers for vascularity, pigmentation, thickness, relief, pliability, and surface area at 6 months. No evidence of DNA from cells of StrataGraft tissue was observed after 3 months in any tested subjects. No safety signals associated with StrataGraft skin tissue were observed, and the reduction in autograft harvest resulted in significantly lower pain scores at prospectively identified donor sites.

Conclusions: StrataGraft tissue is a novel tissue product with the potential to promote wound healing in patients with deep partial thickness burns without the need for autografting. Results from the STRATA2011 study showed that StrataGraft tissue provided substantial wound closure without autograft at 3 months, and no differences from autograft in clinical observer-rated scar assessment at 6 months. Additional comparisons through 12 months will be presented. The rationale for the phase III STRATA2016 study design with cryopreserved StrataGraft for both the co-primary endpoints will also be presented. Patient enrollment and assessment for this

	Biomedical Advanced Research and Development Authority-funded phase III study are ongoing.
Disclosure:	Matthew E. Barton – Salary and Stock: Mallinckrodt Pharmaceuticals Allen Comer – Salary: Stratatech Corporation Mary Lokuta – Salary: Stratatech Corporation Peggy Rooney – No Relevant Financial Relationships to Disclose Barbara Matthews – No Relevant Financial Relationships to Disclose David Ng – Salary and Consulting Fees: Stratatech Corporation David Morris – No Relevant Financial Relationships to Disclose Kristine E. Lee – No Relevant Financial Relationships to Disclose Lynn Allen-Hoffmann – Salary and Shareholder: Stratatech Corporation