Skin Graft Donor-Site Morbidity: A Systematic Literature Review

Skin graft donor-site morbidities impose a significant burden on patients and negatively impact their quality of life

Significance Statement

- Split-thickness skin grafts (STSGs) are part of the standard treatment for burn, traumatic, and chronic wounds.[1,2] Despite widespread use, no systematic literature review of donor-site morbidities is readily available.

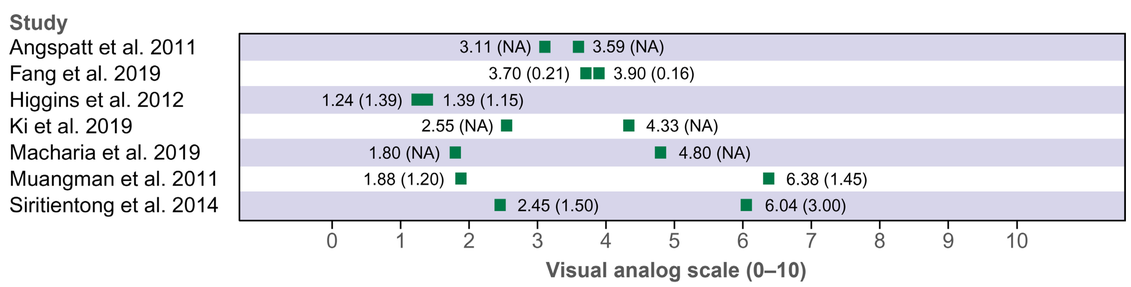
Data Source and Results

- Literature searches for English-language articles were conducted in PubMed, EMBASE, and Chemical Abstracts from January 1, 2009 to July 16, 2019
- Among 4271 articles identified, 77 studies met criteria for inclusion in data analysis (61 RCTs, 9 nonrandomized clinical trials, 3 observational studies, and 4 QoL/PRO studies)
- Literature search and screening overview are shown in **Figure 1**

Study outcomes

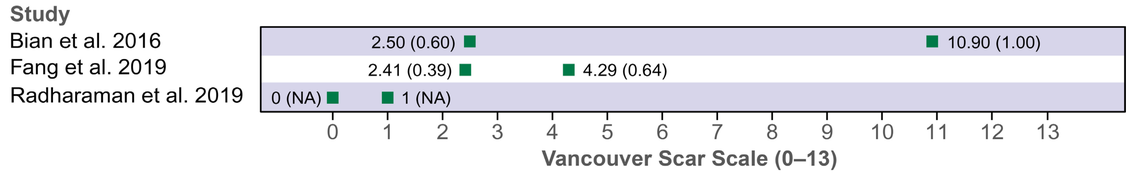
- Time to epithelialization was reported in 62 (81%) studies
  - Mean time to epithelialization (40 studies): 4.7 (standard deviation: 0.2) to 35.0 days
  - Median time to epithelialization (12 studies): 7 to 26 days
- Pain assessment was reported in 41 (53%) studies; results of mean pain scores using the visual analog scale (0–10 scoring, 0 being no pain and 10 being extreme pain) on postoperative day 3 ranged from 1.24 to 6.38 (**Figure 2**)
- Scar score was reported in 18 (23%) studies; results of mean scar scores using the Vancouver Scar Scale (0–13 scoring, 0 being normal and 13 being worst scar) at 1-year post-STSG ranged from 0 to 10.9 (**Figure 3**)

Figure 2. Mean Pain Scores on Postoperative Day 3 (n = 7 studies)



Note: Values are mean (standard deviation) from each treatment arm in that study.
For studies with more than 2 treatment arms, only the minimum and maximum data points of all treatment arms are shown.
NA = not available.

Figure 3. Mean Scar Scores at 1-Year Post Surgery (n = 3 studies)



Note: Values are mean (standard deviation) from each treatment arm in that study.
For studies with more than 2 treatment arms, only the minimum and maximum data points of all treatment arms are shown.
NA = not available.

- One study reported 28% of patients had hypertrophic scars at the donor sites at 8 years
- Survey data from the European Quality of Life-5 Dimensions and the European Quality of Life visual analog scale showed that patients with STSGs had a significantly lower general health state compared with that of the general population

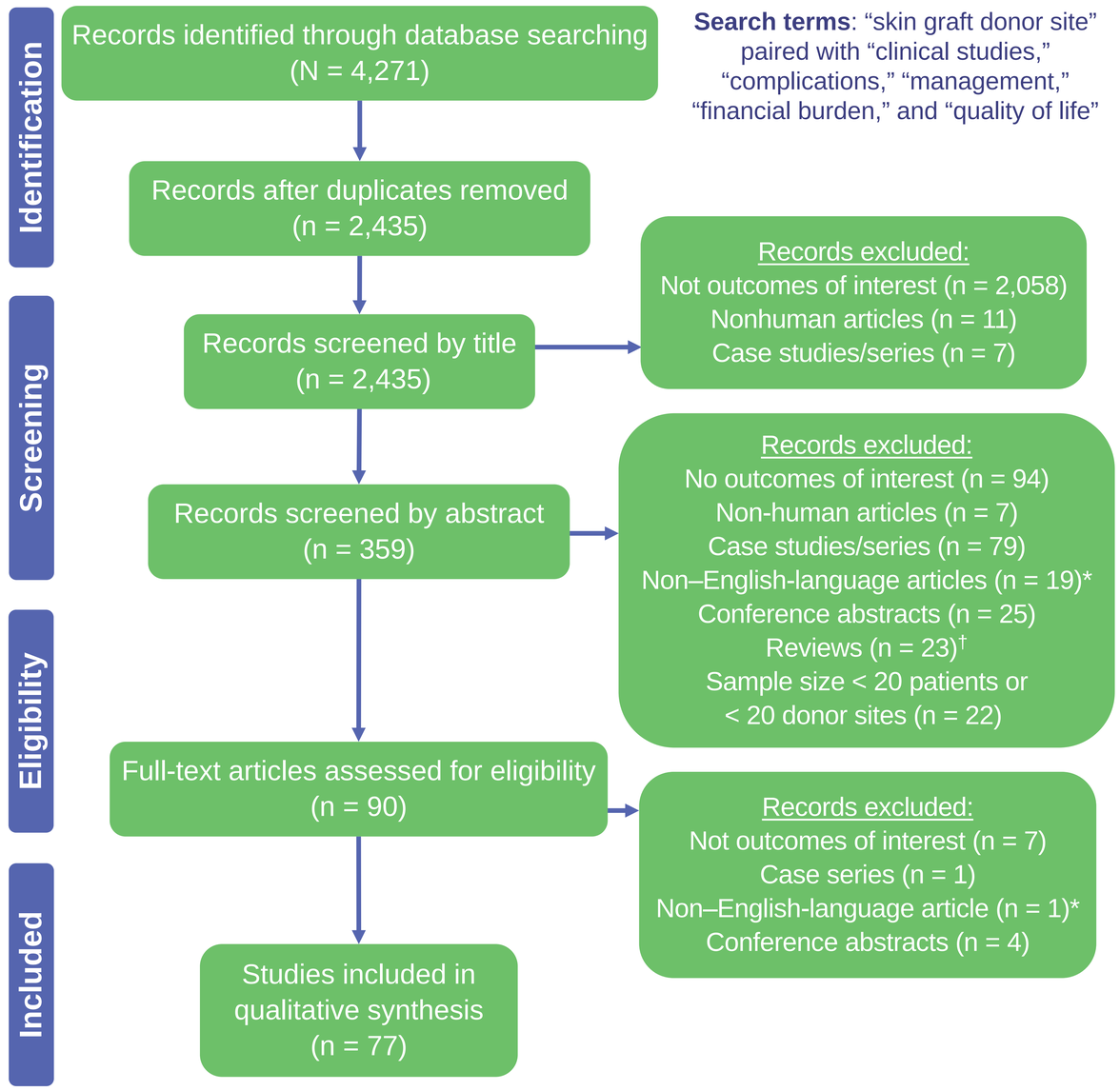
Lessons Learned

- The literature on quantitative, long-term assessments of skin graft donor-site morbidity is limited
- The incidence of complications, such as hypertrophic scarring, resulting from skin graft harvesting is unknown and rarely discussed
- There is a need for alternative treatment options to reduce or eliminate STSG harvesting, which causes iatrogenic donor-site wounds and can result in significant morbidities

References

1. Osborne SN, et al. *Adv Skin Wound Care*. 2016;29(2):57-64. 2. Ogawa R. *Burns Trauma*. 2019;7:7.

Figure 1. PRISMA Flow Diagram



PRISMA, Preferred Reporting Items for Systematic Reviews and Meta-Analyses.
*Despite limiting searches to include only English-language articles, a small number of articles in other languages were found. These non–English-language articles were excluded during screening.
†Reviews of dressings and other interventions.

Limitations

- Only English-language literature was included in this systematic literature review
- The use of different timepoints and scales for assessments of pain and scarring limited the comparison of results across studies
- The methodologic quality of the included studies was not assessed
- Results of this analysis may not be generalizable to clinical outcomes in a real-world setting

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Disclosures

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This study was funded by Mallinckrodt Pharmaceuticals.

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