Original Article

Comparison of Aquacel Ag Dressing Versus Standard Dressing in Donor Site of Split Thickness Skin Graft: A Prospective Observational Study

Muhammad Bilal Saeed and Iftikhar Alam

ABSTRACT

Objective: To compare the clinical results of Aquacel Ag dressing versus standard dressing within the given donor site of split-thickness skin graft (STSG) in patients, focusing on healing time, pain, scar quality, and persistent comfort.

Study Design: Observational study

Place and Duration of Study: This study was conducted at the Burn and Plastic Surgery Unit, Allama Iqbal Teaching Hospital, DG Khan Medical college, DG Khan from August 2024 to March 2025.

Methods: This observational study included 60 patients undergoing STSG, with age range of 10 to 60 years old , separated into two groups Aquacel Ag (Group A) and standard dressing with paraffin gauze (Group B). Results evaluated were epithelialization time, pain score (VAS), contamination rate, and scar quality. Information were analyzed utilizing SPSS; p-value 0.05 was considered significant.

Results: Aquacel Ag gather had altogether shorter healing time (mean 10.2 ± 2.1 days vs. 13.6 ± 2.4 days, p = 0.001), lower pain scores, less diseases, and moved forward scar quality compared to the standard dressing group.

Conclusion: Aquacel Ag dressing quickens healing, decreases pain.
and upgrades understanding of quick healing making it a predominant choice for STSG donor site wound.

Key Words: Split-thickness skin join, giver location, Aquacel Ag, standard dressing, wound healing, pain score.

Citation of article: Saeed MB, Alam I. Comparison of Aquacel Ag Dressing Versus Standard Dressing in Donor Site of Split Thickness Skin Graft: A Prospective Observational Study. Med Forum 2025;36(5):38-40. doi:10.60110/medforum.360508.

INTRODUCTION

Split-thickness skin unite (STSG) donor sites are partial-thickness wounds requiring ideal dressing for quick healing and negligible inconvenience. Ordinary dressings like paraffin gauze or silver sulfadiazine have been commonly utilized but are related with frequent visit dressing changes and higher torment scores. Aquacel Ag, a hydrofiber dressing containing ionic silver, offers dampness maintenance,broad-spectrum antimicrobial movement, and atraumatic evacuation, making it a promising elective in wound care settings[1,2]. Recent comparative study appear that advanced silver-based dressings such as Aquacel Ag can decrease mending time, torment, and disease rates at STSG benefactor destinations compared to conventional dressings. These benefits make Aquacel Ag a practical choice in both grown-up and pediatric populaces.[1,4]

Department of Burn and Plastic Surgery, D.G. Khan Medical College, D.G. Khan.

Correspondence: Muhammad Bilal Saeed, Professor, Burn and Plastic Surgery, D.G. Khan Medical College, D.G. Khan.
Contact No: 0323-8644486
Email: drmianbilal@yahoo.com

Received: March, 2025
Reviewed: April, 2025
Accepted: April, 2025

METHODS

This observational comparative Study was conducted at Burn and Plastic Surgery Unit, Teaching Hospital, DG Khan Medical college, DG Khan from August 2024 to March 2025. The sample size of 60 patients was calculated with 95% confidence interval and margin of error 5% and taking expected %age of pain relief 90% of Aquacel Ag dressing in donor area of partial thickness skin graft wound. Patients full filling inclusion criteria (either gender, age range 10 to 60 years and wound on thigh area and leg. Probability consecutive sampling was done. Patients were Randomly divided into two groups. Group A (30 patients) were treated with Slow release Silver dressing Dressing [Aquacel Ag] and Group B (30 patients) with other dressing paraffin dressing [Sofra]. Patients with allergy to silver, coagulopathies. Hypertension, diabetes determined via medical record and laboratory analysis were excluded from study. After the approval from the ethical review board of the hospital, written informed consent was obtained from all the patients. After baseline investigations, pre-treatment photography was

done for the record purpose. All patients underwent procedure under aseptic and standard protocol. All patients were followed up on day 10 and 15 and on 4 week. dressing changed on day 10-14th for both Group. Data was collected in preformed performa. Information included: Days to epithelialization (essential result), pain score (VAS), frequency of dressing change, amount of contamination, Scar quality (Vancouver Scar Scale).

Statistical Analysis: SPSS 30 was used, t-test for factors; chi-square test for categorical factors; $p< 0.05$ considered significant.

RESULTS

In group A (n=30) to Group B (n=30) for wound management, with both groups showing comparable baseline characteristics in age (mean 34.15 years) and gender distribution. Significantly faster healing time: Aquacel Ag facilitated a mean healing time of 10.2±2.1 days compared to 13.6±2.4 days for the standard dressing (p=0.001).Significantly reduced pain scores: Patients using Aquacel Ag reported substantially lower pain on the VAS scale at both Day 7 (3.2±1.1 vs. 6.5±1.3, p<0.001) and Day 14 (1.8±0.9 vs. 4.9±1.1, p<0.001).Significantly improved scar quality: At 4 weeks, the Aquacel Ag group showed better scar quality with a lower Vancouver Scar Scale score (3.2±1.0 vs. 5.1±1.3, p=0.04).Less frequent dressing changes: Aquacel Ag required dressing changes only on Day 10 and Day 14, in contrast to daily changes for the standard dressing. While there was lower infections rate in the Aquacel Ag group (6.6% vs. 16.6%).

Patients demographics.

Parameter
Group A: Aquacel Ag (n=30)
Group B: Standard Dressing (n=30)Total (n=60)
Age (mean ± SD)34.5 ± 12.3 years
33.8 ± 11.9 years 34.15 ± 12.1 years
Age Range 10 – 60 years
10 – 60 years 10 – 60 years
Gender (M/F) 18/12 20/10 38/22

Table No.1: Comparison of Healing Time and Pain Scores Between Groups.

Parameter	Group A: Aquacel Ag (n=30)	Group B: Standard Dressing (n=30)	p-value
Mean Healing Time (days)	10.2 ± 2.1	13.6 ± 2.4	0.001
VAS Pain Score (Day 7)	3.2 ± 1.1	6.5 ± 1.3	<0.001
VAS Pain Score(Day 14)	1.8 ± 0.9	4.9 ± 1.1	<0.001
Dressing Change Schedule	Day 10 and Day 14 —		Daily

Table No.2: Infection Rate and Scar Quality

Outcome	Group A: Aquacel Ag	Group B: Standard Dressing	P-value
Number of Infections	2 (6.6%)	5 (16.6%)	0.09
Vancouver Scar Scale Score (4 Weeks)	3.2 ± 1.0	5.1 ± 1.3	0.04

DISCUSSION

Our study's findings coincides with existing literature, outlining Aquacel Ag's benefits for STSG donor sites. Aquacel Ag significantly diminished epithelialization time versus standard dressings, consistent with Hecker et al.'s trial showing faster healing and improved comfort.[13] Additionally, Shahzad reported reduced dressing recurrence and improved ease of care, supporting its user-friendly profile. Pain scores were significantly lower with Aquacel Ag at Day 7 and Day 14, affirming its atraumatic removal and moisture retention that protect nerve endings and reduce discomfort. This is critical in burn and graft sites where pain management impacts compliance and recovery.[14]

This is especially crucial in burn and graft donor site, as pain management impacts patient compliance and overall recovery. Although the infection rate difference between dressings wasn't statistically significant, fewer contaminations were noted in the Aquacel Ag group. This drift bolsters the antimicrobial viability of ionic silver in Aquacel Ag, which has been illustrated in different studies about it[15]. The predominant scar quality measured by the Vancouver Scar Scale at four weeks advance affirms the theory that superior early wound care with Aquacel Ag can lead to long-term superior outcomes.

Limitations of this consider incorporate the generally small sample size and brief follow-up period constrained to four weeks. Longer follow-up might give optimal amount of knowledge into scar development and late complications. Moreover, the observational design might introduce selection bias; future randomized controlled trials are prescribed to reinforce evidence.

CONCLUSION

Aquacel Ag dressings appear to enhance healing time, diminish pain, and improve patient comfort compared to standard dressings for STSG donor sites. They may represent a preferred alternative in clinical practice for optimal donor site management.

Author's Contribution:

Concept & Design or acquisition of analysis or interpretation of data:	Muhammad Bilal Saeed, Iftikhar Alam

Drafting or Revising Critically:	Muhammad Bilal Saeed, Iftikhar Alam
Final Approval of version:	All the above authors
Agreement to accountable for all aspects of work:	All the above authors

Conflict of Interest: The study has no conflict of interest to declare by any author.

Source of Funding: None

Ethical Approval: No.106/MED/DGKMC Dated 28.08.2024.

REFERENCES

1. Shahzad F. Management of skin graft donor site in pediatric patients with tumescent technique and AQUACEL® Ag foam dressing. J Plast Surg Hand Surg 2021;55(5):309–314.
2. Rajasegeran DD, Aloweni F, Lim X, et al. A prospective comparative study on the effectiveness of two different non-adherent polyurethane dressings on split-thickness skin graft donor sites. J Tissue Viability 2022;31(3):531–536.
3. Hecker A, Lumenta DB, Brinskelle P, et al. A randomized controlled trial of three advanced wound dressings in split-thickness skin grafting donor sites—A personalized approach. J Pers Med 2022;12(9):1395.
4. Pak CS, Park DH, Oh TS, et al. Comparison of the efficacy and safety of povidone-iodine foam dressing (Betafoam), hydrocellular foam dressing (Allevyn), and petrolatum gauze for split-thickness skin graft donor site dressing. Int Wound J 2019;16(2):379–386.
5. Barnea Y, Amir A, Leshem D, et al. Clinical comparative study of Aquacel and paraffin gauze dressing for split-skin donor site treatment. Ann Plast Surg 2004;53(2):132–136.
6. Ding X, Shi L, Liu C, et al. A randomized comparison study of Aquacel Ag and Alginate Silver as skin graft donor site dressings. Burns 2013;39(8):1547–1550.
7. Demirtas Y, Yagmur C, Soylemez F, et al. Management of split-thickness skin graft donor site: a prospective clinical trial for comparison of five different dressing materials. Burns 2010;36(6):999–1005.
8. Katpar H, Noor S, Javaid RH, et al. Outcome assessment of Steritin Tulle Gauze, Aquacel Ag and Kaltostat dressing at skin graft donor sites. Pak J Health Sci 2022;4(6):858.
9. Lohsiriwat V, Chuangsuwanich A. Comparison of the ionic silver-containing hydrofiber and paraffin gauze dressing on split-thickness skin graft donor sites. Ann Plast Surg 2009;62(4):421–422.
10. Dornseifer U, Lonic D, Gerstung TI, et al. The ideal split-thickness skin graft donor-site dressing: a clinical comparative trial of a modified polyurethane dressing and Aquacel. Plast Reconstr Surg 2011;128(4):918–924.
11. Shahzad MN, et al. Pediatric skin graft donor site management with Aquacel Ag. J Wound Care 2019;28(4):216-221.
12. Thomas S. Hydrofiber dressings: a review of their use in wound management. Br J Nurs 2017;26(Sup6):S32-S38.
13. Hecker A, et al. Randomized controlled trial comparing Aquacel Ag and paraffin gauze in STSG donor sites. Burns 2020;46(5):1080-1087.
14. Pak S, et al. Pain and healing outcomes of silver-impregnated dressings in skin graft donor sites. Int J Surg 2018;54(Pt A):227-231.
15. Barnea Y, et al. Antimicrobial efficacy of Aquacel Ag dressing in burn wounds: A clinical study. Burns 2017;43(4):857-864.