ISSN : (Online): 3008-038X
Abbreviation: J Derm Cse Rep
DOI: 10.61705/jdcr.18.3.2025.79.89

Journal of Dermatological Case Reports

Observational Study on Factors Affecting Success of Split Skin Graft in Management of Skin Loss

Dr Sher Singh Dagur [1], Dr Sanjay Sharma [2], Dr Sachin Santosh Narate [3]

[1] Assistant Professor, Dept. of General Surgery, RAMA Medical College, Kanpur, Uttar Pradesh, India
[2] Assistant Professor, Dept. of General Surgery, RAMA Medical College, Kanpur, Uttar Pradesh, India
[3] Junior Resident, Dept. of General Surgery, Yashoda Hospital, Nehru Nagar, Ghaziabad, Uttar Pradesh, India

Corresponding Author

Dr Sher Singh Dagur
Assistant Professor,
Department of General Surgery,
RAMA Medical College,
Kanpur, Uttar Pradesh, India

drssdagur@gmail.com

Abstract:

Background:
Split skin grafting (SSG) is a widely practiced reconstructive technique for managing skin loss due to trauma, burns, infections, and chronic ulcers. Despite its frequent use, graft failure remains a significant challenge influenced by multiple patient-, wound-, and procedure-related factors. This study aimed to identify determinants affecting the success of SSG uptake in patients presenting with skin loss.

Methods: An observational study was conducted on 87 patients with skin loss requiring SSG. Baseline demographic, clinical, laboratory, and microbiological parameters were recorded, along with perioperative factors such as dressing material, antibiotic therapy, and timing of surgery. Graft uptake was assessed and categorized as complete, partial, or failed. Statistical analysis included descriptive measures and bivariate comparisons to identify predictors of successful grafting.

Results: The mean age of patients was 46.1 ± 15.8 years, with a male predominance. The most common causes of skin loss were burns (33.3%), necrotizing fasciitis (19.5%), and diabetic ulcers (18.4%). The mean body surface area affected was 7.4 ± 11.0%. Laboratory evaluation revealed mean hemoglobin of 10.8 ± 2.8 g/dL and mean fasting blood sugar of 117.7 ± 55.5 mg/dL. Complete graft uptake was achieved in 47.1% of patients, partial in 49.4%, and failure in 3.4%. Age was significantly associated with graft success, with younger patients showing better outcomes ($p < 0.05$). Other factors, including wound size, microbial isolates, dressing material, antibiotic type, and hospital stay, did not significantly affect graft uptake.

Conclusion: SSG uptake is strongly influenced by patient age, while other clinical, laboratory, and perioperative factors demonstrated no significant impact. Optimizing patient selection and perioperative care, particularly in elderly patients, may improve graft outcomes.

Keywords:

Split skin graft, skin loss, graft uptake, age, wound healing, outcome predictors

Received : 25-12-2024 **Revised : 30-12-2024** **Accepted: 22-01-2025** **Published : 27-03-2025**

ISSN : (Online): 3008-038X
Abbreviation: J Derm Cse Rep
DOI: 10.61705/jdcr.18.3.2025.79.89

Introduction

Skin loss is a major surgical concern encountered in a wide spectrum of clinical conditions including trauma, burns, infections, chronic ulcers, and oncological resections. In India, trauma alone accounts for nearly 15–20% of hospital admissions, while burns affect an estimated 6–7 million people annually, with about one million requiring hospitalization [1,2]. Chronic ulcers add further to this burden; for instance, diabetic foot ulcers occur in approximately 15% of individuals with diabetes during their lifetime and are a leading cause of lower limb amputation [3]. The morbidity associated with skin loss is substantial, leading to prolonged hospital stay, repeated interventions, functional impairment, disfigurement, and significant healthcare expenditure. Restoration of skin cover is therefore not only essential for wound healing but also for preserving function, reducing infection risk, and improving overall quality of life [3].

Among the various reconstructive options available, split-thickness skin grafting (SSG) continues to be the most widely used technique due to its technical simplicity, cost-effectiveness, and ability to cover large surface areas [4]. The procedure involves harvesting the epidermis and part of the dermis from a donor site and transferring it to a prepared recipient bed. However, despite being one of the most common procedures in reconstructive surgery, the reported failure rates of SSGs remain significant, ranging from 10–30% in different clinical series [5,6]. A failed graft prolongs the healing process, necessitates repeated procedures, and substantially increases healthcare costs [6].

The survival of a skin graft depends on the phases of plasmatic imbibition, inosculation, and revascularization, which require a well-vascularized, infection-free wound bed [7]. Several determinants influence graft take, including patient-related, wound-related, and surgical factors. Patient comorbidities such as diabetes mellitus, peripheral vascular disease, anemia, malnutrition, smoking, and immunosuppression adversely affect outcomes [8,9]. Similarly, wound infection, hematoma formation, and poor vascularity of the recipient bed are well-known contributors to failure. Surgical factors, including the thickness of the harvested graft, the technique of fixation, and the type of dressing used, also play an important role. Studies have shown that advanced techniques such as negative pressure wound therapy improve graft take compared to conventional dressings by enhancing immobilization and reducing seroma or hematoma formation [9,10].

Recent evidence from India underscores the importance of these determinants in local settings. It was found that the majority of graft uptake failure were due to infection and anemia [11]. Similarly, low serum albumin levels, uncontrolled diabetes, and wound infection were significantly associated with poor graft survival [12]. Globally, nutritional status and comorbidities are strong predictors of graft outcomes, but the magnitude and interplay of these factors vary across populations [13].

Although multiple studies have attempted to identify predictors of graft survival, the existing data are fragmented, heterogeneous, and context-dependent. There remains a paucity of comprehensive studies in the Indian population that simultaneously evaluate the impact of patient, wound, and surgical factors in a tertiary care hospital setting. Since patient characteristics, prevalence of comorbidities, and wound etiologies in India differ significantly from those in high-income countries, it is essential to generate region-specific data. A better understanding of these determinants can help optimize preoperative preparation, refine intraoperative techniques, and improve postoperative care protocols, ultimately enhancing graft success rates and patient outcomes.

Material and methods

Study Design and Setting

ISSN : (Online): 3008-038X
Abbreviation: J Derm Cse Rep
DOI: 10.61705/jdcr.18.3.2025.79.89

This was a prospective observational study conducted over a period of 24 months, from September 2017 to August 2019, in the Departments of General Surgery and Plastic Surgery at the Institute of Naval Medicine, INHS Asvini, Colaba, Mumbai, a tertiary care hospital. All patients with skin loss requiring SSG and fulfilling the inclusion criteria were enrolled consecutively. A minimum of 75 patients was set as the sample size for the study. Institutional Ethics Committee approval was obtained, and informed consent was taken from all participants.

Inclusion and Exclusion Criteria

All patients with skin loss at various sites of the body due to different causes, requiring surgical intervention in the form of SSG for wound closure, were included. Exclusion criteria comprised: (1) patients managed on an outpatient basis without surgical intervention, (2) death during treatment (such as in extensive burns), (3) patients requiring additional procedures such as flap cover, (4) iatrogenic skin loss due to elective procedures (e.g., syndactyly correction, burn contracture release, excision of fungating breast carcinoma), and (5) patients leaving against medical advice during treatment. Diabetic patients with skin loss from specific causes such as necrotizing fasciitis were classified under the respective etiological category and not under diabetic ulcers.

Data Collection and Preoperative Assessment

Data were recorded in a predesigned proforma, including patient demographics, etiology of skin loss, wound characteristics, comorbidities, hematological and biochemical investigations, and culture and sensitivity of wound swabs where indicated. Body surface area involved in burns was calculated using the Lund and Browder chart. Wound bed status, granulation quality, slough, exudate, and signs of infection were documented. Antibiotic administration was guided by sensitivity patterns wherever available. Patients were categorized into four groups based on antibiotic use: (i) sensitive simple antibiotics, (ii) sensitive higher-generation antibiotics, (iii) non-sensitive simple antibiotics, and (iv) non-sensitive higher-generation antibiotics. Dressing materials used were also classified into conventional dressings (normal saline, povidone-iodine, silver sulfadiazine, hydrogen peroxide) and advanced dressing agents (lyseal, necrid, calgigraf-Ag, fusigen sprays).

Preparation of Recipient and Donor Sites

Wound beds were prepared either by immediate excision of necrotic tissue in acute cases (burns, avulsion injuries) or by conservative management with daily dressings, debridement, and antiseptic soaks until healthy granulation was achieved. Granulation tissue considered suitable for grafting was clean, firm, vascular, and bled on touch without evidence of streptococcal infection. Infected or sluggish wounds were managed with repeated debridement, Dakin's or povidone iodine dressings, appropriate antibiotics, and local wound-stimulating measures (surgical excision of fibrotic margins, chemical cauterization, or heliotherapy). Donor sites were prepared with thorough cleansing, shaving, antiseptic preparation, and draping. The thigh was the most common donor site, although trunk, scalp, or gluteal regions were used when necessary.

Operative Technique

SSGs were harvested using Humby's knife or dermatome, with graft thickness maintained between 0.012–0.018 inches. The graft was spread on Vaseline gauze with the raw surface upward and secured over the prepared wound bed using sutures, staples, or quilting techniques. Fixation was reinforced with tie-over dressings or immobilization with plaster of Paris splints where required (Figure 1).

Postoperative Care and Follow-up

ISSN : (Online): 3008-038X
Abbreviation: J Derm Cse Rep
DOI: 10.61705/jdcr.18.3.2025.79.89

Grafted areas were dressed with non-adherent paraffin gauze, layered absorbent gauze, cotton pads, and pressure bandages. Extremities were immobilized and elevated. First inspection of the graft site was performed between the third and fifth postoperative days. Dressings were changed every 1–3 days depending on soakage. Hematomas or seromas were evacuated promptly. Donor sites were managed with paraffin gauze or occlusive dressings until epithelialization. Patients were followed up for at least 14 days postoperatively, and further until complete wound healing was achieved.

Outcome Measures

The primary endpoint was graft survival at 14 days, classified as complete (>90% take), partial (30–90% take), or failed (<30% take). Secondary outcomes included rate of healing, wound bed status, presence of infection, amount of exudate, odor control, and pain relief. Chronic wounds were assessed for granulation quality and progression toward epithelialization.

Statistical Analysis

Data were entered in Microsoft Excel and analyzed using SPSS version 20.0 (IBM Corp., Armonk, NY). Continuous variables were expressed as mean ± standard deviation, while categorical variables were expressed as frequency and percenatge. Comparisons between groups were made using chi-square test for categorical variables. A p-value <0.05 was considered statistically significant.

Figure 1: Grafting of SSG on recipient site

Results

A total of 87 patients with skin loss undergoing split skin grafting were included in the study. The mean age was 48.2 ± 18.1 years, with nearly equal representation of patients below and above 50 years. Males constituted the majority (63.2%) compared to females (36.8%). The extent of skin loss, measured as percentage of body surface area (%BSA), was <5% in 57.5%, 5–15% in 27.6%, 15–30% in 12.6%, and >30% in only 2.3% of patients. Regarding socioeconomic distribution, 71.3% belonged to the middle socioeconomic class, while the remainder

ISSN : (Online): 3008-038X
Abbreviation: J Derm Cse Rep
DOI: 10.61705/jdcr.18.3.2025.79.89

were from the upper class; no patients were reported in the lower class (Table 1).

Table 1. Baseline characteristics of patients (N = 87).

Variables	Frequency (%) / Mean ± SD
Age (years)	46.06 ± 15.75
< 25 yrs	8 (9.2%)
25–50 yrs	34 (39.1%)
> 50 yrs	45 (51.7%)
Gender	
Male	55 (63.2%)
Female	32 (36.8%)
BMI (kg/m²)	23.33 ± 3.75
Skin loss BSA (%)	7.44 ± 11.00
< 5%	50 (57.5%)
5–15%	24 (27.6%)
15–30%	11 (12.6%)
> 30%	2 (2.3%)
Socioeconomic status	
Upper	25 (28.7%)
Middle	62 (71.3%)
Lower	0 (0%)
Cause of skin loss	
Diabetic ulcer	16 (18.4%)
Venous ulcer	9 (10.3%)
Burn	29 (33.3%)
Necrotizing fasciitis	17 (19.5%)
Bed sore	6 (6.9%)
Others	10 (11.5%)
Region affected	
Upper limb	35 (40.2%)
Lower limb	58 (66.7%)
Trunk	22 (25.3%)
Head and neck	6 (6.9%)
Perineum	9 (10.3%)
Gluteal and sacrum	15 (17.2%)

The mean fasting blood sugar (FBS) was 117.7 ± 55.5 mg/dL, and the mean hemoglobin was 10.8 ± 2.8 g/dL. The mean bleeding time was 0.86 ± 1.54 minutes. Swab cultures showed that the most common isolates were Escherichia coli (11.5%), Pseudomonas (6.9%), Staphylococcus (4.6%), Klebsiella and Proteus (3.4% each), while Acinetobacter and Citrobacter were found in 2.3% each. Importantly, 65.5% of patients showed no

ISSN : (Online): 3008-038X
Abbreviation: J Derm Cse Rep
DOI: 10.61705/jdcr.18.3.2025.79.89

bacterial growth. Antibiotic sensitivity testing was performed in 28.7% of cases (Table 2).

Table 2. Laboratory and microbiological characteristics of patients (N = 87).

Variables	Frequency (%) / Mean ± SD
Fasting Blood Sugar (mg/dL)	117.7 ± 55.5
Hemoglobin (g/dL)	10.8 ± 2.8
Bleeding Time (min)	0.86 ± 1.54
Swab culture isolate	
E. coli	10 (11.5%)
Klebsiella	3 (3.4%)
Proteus	3 (3.4%)
Pseudomonas	6 (6.9%)
Acinetobacter	2 (2.3%)
Citrobacter	2 (2.3%)
Staphylococcus	4 (4.6%)
Streptococcus	0 (0%)
No growth	57 (65.5%)
Antibiotic sensitivity done	
Yes	25 (28.7%)
No	62 (71.3%)

Patients presented after a mean of 6.9 ± 7.1 days following injury, and the mean duration from presentation to surgery was 10.7 ± 6.6 days. The average duration of antibiotic use was 8.3 ± 2.7 days. Most patients (78.2%) received antibiotic therapy for 5–10 days, while 11.5% required >10 days. Simple antibiotics were used in 74.7% and higher-generation antibiotics in 25.3%. Conventional dressing materials were used in 65.5%, whereas newer dressings were applied in 34.5%. The mean duration of hospital stay was 21.2 ± 11.4 days. With respect to graft uptake, 47.1% achieved complete take, 49.4% had partial take, and 3.5% had no graft take (Table 3).

Table 3. Perioperative and outcome characteristics of patients (N = 87).

Variables	Frequency (%) / Mean ± SD
Day of presentation (days)	6.9 ± 7.1
Day to surgery (days)	10.7 ± 6.6
Duration of antibiotic use (days)	8.3 ± 2.7
Antibiotic therapy duration	
< 5 days	10 (11.5%)
5–10 days	68 (78.2%)
> 10 days	9 (10.3%)
Type of antibiotics used	

ISSN : (Online): 3008-038X
Abbreviation: J Derm Cse Rep
DOI: 10.61705/jdcr.18.3.2025.79.89

Simple	**65 (74.7%)**
Higher generation	**22 (25.3%)**
Dressing material	
Simple	**57 (65.5%)**
Newer	**30 (34.5%)**
Hospital stay (days)	**21.2 ± 11.4**
SSG graft uptake	
Complete	**41 (47.1%)**
Partial	**43 (49.4%)**
No take	**3 (3.5%)**

On bivariate analysis, age was the only variable showing a significant association with graft outcome ($p = 0.034$). Patients <50 years had a higher rate of complete graft uptake (59.5%) compared to those ⩾ 50 years (35.6%), who more frequently experienced partial or no uptake. Other factors, including gender, socioeconomic status, %BSA involvement, microbiological isolates, antibiotic therapy type and duration, and dressing materials, did not show statistically significant associations with graft uptake (all $p > 0.05$) (Table 4).

Table 4. Association of baseline and clinical variables with split skin graft outcome (N = 87).

Variables	Complete (n=41)	Partial (n=43)	No take (n=3)	p-value
Age group	**Frequency (%)**			
<50 years (n=42)	**25 (61.0%)**	**17 (39.5%)**	**0 (0.0%)**	**0.012**
≥50 years (n=45)	**16 (39.0%)**	**26 (60.5%)**	**3 (100.0%)**	
Gender				
Male (n=55)	**28 (68.3%)**	**25 (58.1%)**	**2 (66.7%)**	**0.506**
Female (n=32)	**13 (31.7%)**	**18 (41.9%)**	**1 (33.3%)**	
Socioeconomic status				
Upper (n=25)	**12 (29.3%)**	**13 (30.2%)**	**0 (0.0%)**	**0.426**
Middle (n=62)	**29 (70.7%)**	**30 (69.8%)**	**3 (100.0%)**	
Lower (n=0)	**0 (0.0%)**	**0 (0.0%)**	**0 (0.0%)**	
15–30 (n=11)	**6 (14.6%)**	**5 (11.6%)**	**0 (0.0%)**	
>30 (n=2)	**0 (0.0%)**	**2 (4.7%)**	**0 (0.0%)**	
%BSA				
<5 (n=50)	**25 (61.0%)**	**23 (53.5%)**	**2 (66.7%)**	**0.723**
5–15 (n=24)	**10 (24.4%)**	**13 (30.2%)**	**1 (33.3%)**	
15–30 (n=11)	**6 (14.6%)**	**5 (11.6%)**	**0 (0.0%)**	
>30 (n=2)	**0 (0.0%)**	**2 (4.7%)**	**0 (0.0%)**	
Swab culture				
E. coli (n=10)	**4 (9.8%)**	**6 (14.0%)**	**0 (0.0%)**	**0.303**
Klebsiella (n=3)	**0 (0.0%)**	**2 (4.7%)**	**1 (33.3%)**	
Proteus (n=3)	**1 (2.4%)**	**2 (4.7%)**	**0 (0.0%)**	

ISSN : (Online): 3008-038X
Abbreviation: J Derm Cse Rep
DOI: 10.61705/jdcr.18.3.2025.79.89

Pseudomonas (n=6)	**2 (4.9%)**	**4 (9.3%)**	**0 (0.0%)**	
Acinetobacter (n=2)	**1 (2.4%)**	**1 (2.3%)**	**0 (0.0%)**	
Citrobacter (n=2)	**0 (0.0%)**	**2 (4.7%)**	**0 (0.0%)**	
Staphylococcus (n=4)	**1 (2.4%)**	**3 (7.0%)**	**0 (0.0%)**	
Streptococcus (n=0)	**0 (0.0%)**	**0 (0.0%)**	**0 (0.0%)**	
No growth (n=57)	**32 (78.1%)**	**23 (53.5%)**	**2 (66.7%)**	
Antibiotic sensitivity done				
Yes (n=25)	**8 (19.5%)**	**16 (37.2%)**	**1 (33.3%)**	**0.141**
No (n=62)	**33 (80.5%)**	**27 (62.8%)**	**2 (66.7%)**	
Antibiotic therapy duration				
<5 days (n=10)	**6 (14.6%)**	**4 (9.3%)**	**0 (0.0%)**	
5–10 days (n=68)	**30 (73.2%)**	**35 (81.4%)**	**3 (100.0%)**	**0.671**
>10 days (n=9)	**5 (12.2%)**	**4 (9.3%)**	**0 (0.0%)**	
Type of antibiotics				
Simple (n=65)	**32 (78.1%)**	**30 (69.8%)**	**3 (100.0%)**	**0.362**
Higher generation (n=22)	**9 (21.9%)**	**13 (30.2%)**	**0 (0.0%)**	
Dressing material				
Simple (n=57)	**31 (75.6%)**	**24 (55.8%)**	**2 (66.7%)**	**0.158**
Newer (n=30)	**10 (24.4%)**	**19 (44.2%)**	**1 (33.3%)**	

Discussion

In our study, age emerged as the only significant determinant of split skin graft (SSG) success, with patients younger than 50 years showing a higher rate of complete graft uptake compared to older individuals ($p = 0.034$). This finding is consistent with previous studies by Sinha et al., and Kumar et al., where aging has been shown to impair wound healing through reduced angiogenesis, delayed fibroblast proliferation, and decreased collagen deposition [14,15]. Furthermore, the higher prevalence of comorbidities in older adults, such as diabetes and peripheral vascular disease, likely contributed to poor graft outcomes [16].

Gender distribution, although skewed towards males (59.8%), did not affect graft survival, aligning with Turissini et al., who also found no sex-based differences in graft uptake [17]. Similarly, socioeconomic status showed no independent effect, suggesting that biological rather than demographic variables are more crucial for graft survival [18].

In terms of wound microbiology, E. coli (11.5%) and Pseudomonas (6.9%) were the most common isolates, while 65.5% of wounds had no growth. Although wound infection is a recognized factor in graft failure, we did not observe a statistically significant correlation between microbial growth and graft outcome. Previous studies, such as those by Wellkemp et al., Nsaful et al., and Balaji et al., emphasized that mere colonization may not impair graft survival, but a high bacterial burden or toxin-producing organisms do [19,20,21]. The absence of significance in our cohort could be explained by timely and appropriate antibiotic coverage, which minimized the clinical impact of colonization [22].

Interestingly, despite routine sensitivity testing being performed in 25.3% of cases, antibiotic sensitivity-guided therapy was not statistically associated with graft success. This finding suggests that empiric perioperative antibiotics, when appropriately chosen, may suffice in the absence of systemic sepsis [23].

ISSN : (Online): 3008-038X
Abbreviation: J Derm Cse Rep
DOI: 10.61705/jdcr.18.3.2025.79.89

Delay in hospital presentation (mean 6.9 ± 7.1 days) and prolonged interval before surgery (10.7 ± 6.6 days) were common in our cohort. Such delays likely contributed to infection risk and suboptimal wound bed quality [24]. However, statistical analysis did not demonstrate a significant correlation with graft outcome.

Antibiotic therapy duration, mostly 5–10 days, and choice between simple versus higher antibiotics were also not significantly associated with outcomes. Studies by Sinha et al., emphasizes that prolonged antibiotic use does not improve graft take but risks antimicrobial resistance [25]. Our findings reinforce the importance of rational antibiotic use [25].

Regarding dressing type, newer materials (e.g., modern moisture-retentive dressings) did not confer better outcomes than conventional dressings. Although studies by Tsuchiya et al., and Mo et al., on negative pressure wound therapy (NPWT) and bioactive dressings report improved graft survival through mechanical stabilization and enhanced angiogenesis, our findings suggest that for small-to-moderate defects, conventional dressings remain adequate, especially in resource-limited settings [26,27].

Complete graft uptake was achieved in 47.1% of patients, while partial uptake occurred in 49.4%, and complete graft failure in 3.4%. The relatively high rate of partial uptake could be linked to delayed presentation and wound bed preparation requirements. Compared to previous studies by Reddy et al., and Haris et al., which report complete uptake in 60–80% of cases, our success rate appears lower. This may reflect differences in patient profiles, wound etiology, and institutional practices [28,29].

The mean hospital stay in our study was 21.2 ± 11.4 days, notably longer than reported elsewhere (typically 10–14 days). Prolonged hospitalization likely resulted from delayed presentations, comorbidities, and extended wound bed preparation prior to grafting [30]. This highlights the need for earlier referral, patient education, and optimization of preoperative care [30].

Clinical Implications

The results underscore the importance of optimizing perioperative care in older patients, including strict glycemic control, nutritional supplementation, and meticulous wound bed preparation, to improve graft success. Rational use of antibiotics and cost-effective use of conventional dressings remain valid strategies in most clinical contexts. Efforts should also focus on reducing delays in presentation and surgical intervention, as these indirectly influence outcomes through infection risk and wound bed quality.

Limitations

This study is limited by its single-center design, relatively small sample size, and lack of multivariate analysis to control for confounding factors such as comorbidities and nutritional status. The follow-up period was limited to immediate postoperative uptake, without long-term assessment of graft durability or functional outcomes. Future studies with larger cohorts and standardized wound scoring systems are warranted.

Conclusion

This study highlights that split skin graft uptake is influenced predominantly by patient-related factors, with age emerging as the most significant determinant of success. While graft outcomes were not significantly affected by wound size, microbial profile, dressing material, or antibiotic regimen, younger patients demonstrated better graft survival than older counterparts. These findings emphasize the need for careful preoperative assessment and optimization in elderly patients to improve outcomes. Further prospective, multicenter studies are warranted to validate these results and to explore tailored perioperative strategies for enhancing graft success.

ISSN : (Online): 3008-038X
Abbreviation: J Derm Cse Rep
DOI: 10.61705/jdcr.18.3.2025.79.89

References

1. Radzikowska-Büchner E, Łopuszyńska I, Flieger W, Tobiasz M, Maciejewski R, Flieger J. An Overview of Recent Developments in the Management of Burn Injuries. Int J Mol Sci. 2023;24(22):16357.
2. Roy A, Mallick B, Ghosh R, Mallik S. A Clinico-Epidemiological Study among Burn Injury Patients in a Tertiary Care Hospital of Eastern India. J Med Sci Health. 2022; 8(2):139-44.
3. McDermott K, Fang M, Boulton AJM, Selvin E, Hicks CW. Etiology, Epidemiology, and Disparities in the Burden of Diabetic Foot Ulcers. Diabetes Care. 2023;46(1):209-21.
4. Kavanagh F, Singhal S, Rozen WM. Split thickness skin graft compression: a scoping review. Gland Surg. 2023;12(2):297-301.
5. Koster ITS, Borgdorff MP, Jamaludin FS, de Jong T, Botman M, Driessen C. Strategies Following Free Flap Failure in Lower Extremity Trauma: A Systematic Review. JPRAS Open. 2023;36:94-104.
6. Balboula AM; Al-Mahrouky AM; AbdelMoamen AE; El Khouly M. Split-thickness skin graft together with site-specific offloading: Accelerated and durable option for healing diabetic foot skin defect. Egyptian J Surgery. 2022;41(2):649-55.
7. Braza ME, Marietta M, Fahrenkopf MP. Split-Thickness Skin Grafts. In: StatPearls. Treasure Island (FL): StatPearls Publishing; 2025.
8. Hom DB, Ostrander BT. Reducing Risks for Local Skin Flap Failure. Facial Plast Surg Clin North Am. 2023;31(2):275-87.
9. Abdulmughni LA, Al-Sanabani JA, Gilan WM, Issa MA, Jowah HM. Split-thickness skin graft outcomes and associated risk factors in patients with skin defects at Al-Gumhouri hospital, Sana'a, Yemen: a prospective observational study. BMC Surg. 2025;25(1):292.
10. Mandili A, Aljubairy A, Alsharif B, et al. Application of Negative Pressure Therapy on Skin Grafts after Soft-Tissue Reconstruction: A Prospective Observational Study. Clin Pract. 2022;12(3):396-405.
11. Dias RH, Salelkar R, Rodrigues J, Rodrigues FCS, Parsekar S. A Clinicopathological Study on Split Thickness Skin Graft Uptake in Diabetics and Factors Affecting Graft Uptake. World J Surg Surgical Res. 2023;6:1458.
12. Sindagikar V, Narasanagi B, Patel F. Effect of serum albumin in wound healing and its related complications in surgical patients. Al Ameen J Med Sci. 2017;10(2)132
13. Woodard CR. Complications in facial flap surgery. Facial Plast Surg Clin North Am. 2013;21(4):599–604.
14. Sinha A, Patel V, Gupta R, Sharma R. A comparative study of split-thickness and full-thickness skin grafts in burn patients. J Burn Care Res. 2018;39(3):289-94.
15. Kumar N, Verma K, Rao P. Full-thickness grafts: Outcomes in a cohort of patients with complex wounds. Plast Reconstr Surg. 2020;145(1):45-52.
16. Khalid KA, Nawi AF, Zulkifli N, Barkat MA, Hadi H. Aging and wound healing of the skin: a review of clinical and pathophysiological hallmarks. Life. 2022;12(12):2142.
17. Turissini JD, Elmarsafi T, Evans KK, Kim PJ. Major risk factors contributing to split thickness skin graft failure. Georget Med Rev. 2019;3:7755.
18. Doctor N, Yang S, Maerzacker S, Watkins P, Dissanaike S. Socioeconomic Status and Outcomes After Burn Injury. J Burn Care Res. 2016;37(1):e56-62.
19. Wellkamp L, Obed D, Enechukwu AOM, Bingoel AS, Dastagir K, Vogt PM. Correlation between Bacterial Wound Colonization and Skin-Graft Loss in Burn Patients. J Burn Care Res. 2023;44(3):649-54.
20. Nsaful KO, Paintsil AB, Dakubo JC, Nsaful J, Appiah-Labi K, Nartey E. An evaluation of bacterial infection of split thickness skin grafts: At the Korle Bu Teaching Hospital. Bali Medical J. 2020;9(1):259.
21. Balaji D, Bhaskarla VVR, Sadhakshi R. Bacterial colonization of leg ulcers and its effect on success rate of skin grafting. Int Surg J. 2020;7:4059-65.
22. Be NA, Allen JE, Brown TS, et al. Microbial profiling of combat wound infection through detection microarray and next-generation sequencing. J Clin Microbiol. 2014;52(7):2583-94.
23. Geethabanu S, Vanaja R. A study to analyse the influence of bacterial bio-burden on the success

ISSN : (Online): 3008-038X
Abbreviation: J Derm Cse Rep
DOI: 10.61705/jdcr.18.3.2025.79.89

rate of split thickness skin grafting. J Clin Diag Res. 2018;12(6):DC23-6.
24. Shikotara D, Paria VV. Impact of Bacterial Infection on Skin Graft Outcomes in Leg Ulcers. Int J Pharm Quality Assurance. 2025;16(6);01-4.
25. Sinha V, Borrelli M, Mimi R, et al. An excuse to misuse? Evaluating the use of prophylactic antibiotics in elective skin graft surgery: a systematic review and meta-analysis. IJS: Short Reports. 2020;5(2):e15.
26. Tsuchiya M, Kushibiki T, Yamashiro T, Mayumi Y, Ishihara M, Azuma R. Continuous negative-pressure wound therapy improves the survival rate of skin grafts and shortens the time required for skin graft survival. Skin Res Technol. 2024;30(7):e13865.
27. Mo R, Ma Z, Chen C, Meng X, Tan Q. Short- and long-term efficacy of negative-pressure wound therapy in split-thickness skin grafts: a retrospective study. Ann Palliat Med. 2021;10(3):2935-47.
28. Reddy S, El-Haddawi F, Fancourt M, et al. The incidence and risk factors for lower limb skin graft failure. Dermatol Res Pract. 2014;2014:582080.
29. Haris S, Nema PK, Charokar K, Gupta N. A clinical study of the role of splitthickness skin autograft in management of wounds and identification of factors influencing the graft uptake. Int Surg J. 2025;12:344-9.
30. Wang SH, Chien CY, Fu CY, Bokhari F. Evaluating the association between time to skin grafting for truncal burn patients and complications: a comparative cohort study using the National trauma data bank. Int J Surg. 2024;110:4581–7.