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Combined Immunosuppressive Therapy (Corticosteroid-Cyclosporine) on Hospital Stay in Patients with SevereCutaneous Adverse Reactions perspective of health worker: A Qualitative Study

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Abstract

Introduction
Severe cutaneous adverse reactions (SCARs) such as Stevens-Johnson Syndrome (SJS), Toxic Epidermal Necrolysis (TEN), and DRESS are rare but life-threatening conditions requiring intensive inpatient care. Corticosteroids remain the main therapy but may prolong hospitalization and increase complications. Combining corticosteroids with cyclosporine has been considered to improve patient outcomes. This study explored healthcare professionals' perspectives on the impact of this therapy combination on hospitalization duration for SCAR patients.

Methods
A qualitative exploratory study was conducted at Dr. Moewardi General Hospital, Surakarta (August–October 2023). Purposive sampling recruited 12 healthcare professionals (3 consultants, 5 residents, 4 nurses) involved in SCAR management. Semi-structured interviews explored diagnostic confidence, treatment approaches, and hospitalization duration. Data were analyzed using thematic analysis.

Result
Physicians reported high diagnostic confidence, with typical hospital stays ranging from 14–30 days. Most favored corticosteroid–cyclosporine combination therapy, perceiving faster recovery and fewer complications. Barriers included limited drug availability, unfamiliarity with dosing, and safety concerns. Nurses emphasized wound care challenges, infection risks, and psychosocial needs. Both groups underlined the importance of multidisciplinary collaboration and family involvement in optimizing patient outcomes.

Conclusion
Healthcare professionals perceive corticosteroid–cyclosporine combination therapy as potentially effective in shortening hospitalization and reducing complications among SCAR patients. Institutional support, clinician training, and further clinical research are recommended to strengthen its implementation.

Keywords: Corticosteroid-cyclosporine combination; hospitalization duration; SCAR

Introduction

Severe cutaneous adverse reactions (SCARs), such as Stevens-Johnson Syndrome (SJS), Toxic Epidermal Necrolysis (TEN), and Drug Reaction with Eosinophilia and Systemic Symptoms (DRESS), represent life-threatening drug-induced hypersensitivity reactions that require intensive inpatient care (Maharani et al., 2020; Perwitasari et al., 2021). Although SCARs are rare, they carry significant risks of morbidity and mortality, with estimated fatality rates ranging from 10% to 50%, particularly in patients with comorbidities or delayed diagnosis and treatment (Lin et al., 2014; Mehrholz et al., 2017).

The management of SCARs typically involves supportive care and wound management, with systemic corticosteroids being a commonly employed therapeutic option (Auyeung & Lee, 2018; Cho & Chu, 2017). However, corticosteroid monotherapy has been associated with mixed clinical outcomes, including an increased risk of infection and prolonged hospital stays. Recent evidence has explored the use of combination immunosuppressive therapy—particularly corticosteroids with cyclosporine—as a potential strategy to improve treatment

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response and reduce the duration of hospitalization (Schneider & Cohen, 2017; Sekula et al., 2013).

Despite growing interest in combination therapies, data from Indonesian healthcare settings remain limited, particularly regarding their impact on hospital stay. This study aims to explore healthcare professionals' perspectives on the use of combined corticosteroid–cyclosporine therapy for SCAR patients at Dr. Moewardi General Hospital in Surakarta, Indonesia, with particular emphasis on perceived benefits in reducing length of hospitalization.

Methods

A. Study Design and Setting

This qualitative exploratory study was conducted at Dr. Moewardi General Hospital, a tertiary referral hospital in Surakarta, Indonesia. The research was carried out over a three-month period, from August to October 2023.

B. Participants

Participants were selected using purposive sampling. The study included 12 healthcare professionals who had experience in managing SCAR patients during hospitalization. These included 3 dermatology consultants, 5 dermatology residents, and 4 nurses from the inpatient dermatology and venereology ward.

C. Data Collection

Semi-structured interviews were conducted using a topic guide developed to explore key domains such as diagnostic confidence, therapeutic strategies, complications, and perceptions regarding hospitalization duration. The interviews took place on October 18, 2023, in a private room at the hospital to ensure confidentiality and comfort.

Questions for physicians included:

- Confidence in SCAR diagnosis
- Concerns when initiating therapy
- Estimations of hospital stay duration
- Views on monotherapy vs. combination therapy
- Need for interdisciplinary collaboration

Nurses were asked about:

- Experiences in managing SCAR patients
- Challenges in care
- Prevention of complications
- Communication with patients and families
- Perceived importance of family support

All interviews were audio-recorded with consent and transcribed verbatim.

D. Data Analysis

Transcripts were analyzed thematically using a five-step approach:

1. Identification of recurring themes
2. Initial coding of meaningful statements
3. Revision of codes and themes as new data emerged
4. Exploration of relationships between themes across professional roles
5. Triangulation and consensus among researchers

Results

A total of 12 healthcare professionals participated in this study, including three dermatologists, five dermatology residents, and four inpatient nurses. All participants had direct experience in the diagnosis and management of patients with severe cutaneous adverse reactions (SCAR), including Stevens-Johnson Syndrome (SJS), Toxic Epidermal Necrolysis (TEN), and DRESS.

Theme	Key Findings
1. Diagnostic Confidence and Clinical Experience	• All dermatologists and residents reported high confidence in diagnosing SCAR (SJS, TEN, DRESS) based on clinical experience, comprehensive history-taking, physical examination, and skin biopsy when indicated.

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	• The number of cases managed ranged from 5 to 15 per physician, with an average of approximately one case per month.
2. Concerns Regarding Therapy and Hospital Course	• Main concerns included the risk of sepsis, progression of skin detachment, and comorbidities that could prolong hospitalization. • Corticosteroids were used with caution due to their immunosuppressive effects and potential to exacerbate infection. • Disease progression was perceived as unpredictable during the acute phase.
3. Hospital Stay and Use of Combination Therapy	• Hospital stay ranged from 7 to 30 days, with around 14 days being typical for moderate to severe cases. • Most physicians supported the use of combination therapy (corticosteroids plus cyclosporine), which was believed to accelerate clinical improvement, reduce corticosteroid dosage, and shorten hospitalization. • Challenges included limited availability of cyclosporine, lack of dosing familiarity, and concerns about adverse effects.
4. Multidisciplinary Collaboration	• Collaboration with internal medicine, ophthalmology, and infectious disease specialists was considered essential for patients with systemic involvement or significant comorbidities. • Multidisciplinary management was particularly important for elderly patients or those with conditions such as diabetes or hypertension.
5. Nursing Perspectives	• Nurses reported an average hospital stay of approximately 14 days for SCAR patients. • Key challenges included extensive wound areas, high risk of secondary infections, and substantial emotional support needs of patients and families. • Preventive measures prioritized strict hygiene protocols, use of isolation rooms, and personal protective equipment. • Family support was viewed as crucial for patient comfort and adherence to follow-up care.

Discussion

This study explored healthcare professionals' perspectives on the management of severe cutaneous adverse reactions (SCAR), with a focus on how combination immunosuppressive therapy (corticosteroids and cyclosporine) influences the duration of hospitalization. The findings revealed several important themes: strong diagnostic confidence among physicians, perceived benefits of combination therapy in reducing hospitalization, and the vital role of multidisciplinary support and psychosocial care.

Diagnostic Confidence and Clinical Experience

All physicians and residents expressed confidence in diagnosing SCAR, supported by their clinical training and access to diagnostic tools such as skin biopsy. This aligns with previous literature stating that early recognition of SCAR is crucial to improving outcomes, as delays in diagnosis can increase the risk of complications and mortality (Mehrholz et al., 2017) (Woolum et al., 2019).

Impact of Combination Therapy on Hospitalization Duration

A key finding was the perception that combining corticosteroids with cyclosporine may help shorten the hospital stay. Cyclosporine, a calcineurin inhibitor, has been shown to modulate T-cell activation and inhibit key pathways in the SCAR inflammatory cascade. Prior studies—including prospective and retrospective analyses—have demonstrated that cyclosporine, when added to corticosteroids, may accelerate epithelial healing and reduce mortality, particularly in TEN patients (Auyeung & Lee, 2018; Schneider & Cohen, 2017).

Participants in this study believed that combination therapy may reduce the total dose and duration of corticosteroid use, thereby minimizing associated complications such as secondary infections and delayed wound healing. This perspective mirrors results from Ye et al. (2016), which concluded that combination therapies reduced recovery time in Asian populations but did not significantly affect mortality (Lerch et al., 2018; Tempark et al., 2022).

Despite these perceived benefits, some participants noted that the use of cyclosporine remains limited due to unfamiliarity with dosing, concerns over nephrotoxicity, and logistical

constraints within the hospital setting. This highlights the need for institutional protocols, education, and accessibility to immunosuppressive agents.

Multidisciplinary Collaboration and Risk Stratification

Many respondents emphasized the importance of interdisciplinary collaboration, particularly for patients with comorbidities such as diabetes, hypertension, or ocular involvement. Previous studies have similarly emphasized that coordinated care among dermatology, internal medicine, ophthalmology, and intensive care teams improves clinical outcomes in SCAR patients.[6]

Additionally, participants noted the utility of scoring systems like SCORTEN to guide prognosis and determine the intensity of monitoring and therapy. This practice is consistent with international recommendations to tailor treatment based on severity scores.

Nursing Perspectives and Psychosocial Support

Nurses provided key insights into the holistic care of SCAR patients. Their perspectives highlighted the emotional distress experienced by both patients and families, especially during prolonged hospital stays. Comfort measures, effective communication, and emotional reassurance were considered essential components of care. These findings echo the work of Lerch et al. (2018), who emphasized that post-discharge sequelae—ranging from physical scarring to psychological trauma—require long-term support.[12]

Family involvement was unanimously considered critical to recovery, not only for emotional comfort but also for continuity of care after discharge. This finding suggests that future models of care for SCAR patients should include family-centered support interventions.

Conclusion

Healthcare providers perceive corticosteroid-cyclosporine combination therapy as a beneficial treatment strategy for SCAR patients, potentially reducing hospitalization time and improving recovery. Addressing barriers to implementation through institutional support and education is essential to integrate this therapy into routine practice. A multidisciplinary and holistic care model remains key to improving patient outcomes.

Study Limitations

This study is limited by its single-center setting and small sample size. As a qualitative design, the findings reflect the experiences and perceptions of healthcare professionals, which may not fully represent patient or family perspectives. Furthermore, clinical outcomes such as exact length of stay or mortality data were not quantitatively analyzed.

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