

Profile of Dermatologic Emergencies At The Emergency Department of RSUD Jombang: A Three-Year Retrospective Study (2023 To 2025)

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Abstrak.

Dermatologic emergencies comprise acute skin conditions requiring prompt recognition and management because delayed treatment may result in systemic complications or death. Epidemiological data from regional hospitals in Indonesia remain limited. To describe the profile of dermatologic emergencies at the Emergency Department of RSUD Jombang during 2023–2025. A retrospective descriptive study was conducted using medical records of dermatology and venereology patients admitted through the emergency department and hospitalized under dermatology specialists. Total sampling was applied. Variables included demographic characteristics, diagnosis, emergency category, length of stay, and patient outcomes. A total of 216 cases were analyzed. Most patients were male (54.6%), with a mean age of 51.6 years; the largest age group was 40–59 years (43.5%). Drug reactions or eruptions (27.8%), dermatitis or eczema (22.7%), leprosy reactions (15.7%), and infections (15.3%) were the most common diagnostic categories. Erythroderma (19.9%), leprosy reaction (15.3%), and Stevens–Johnson syndrome (11.6%) were the leading diagnoses. Most cases were classified as urgent (64.8%), and 88.9% of patients showed clinical improvement. Drug reactions, erythroderma, and leprosy-related conditions predominated among dermatologic emergencies, providing evidence to strengthen emergency preparedness and acute dermatology services in regional hospitals.

Keywords: *Dermatologic Emergency, Emergency Department, Medical Records, Retrospective Study And RSUD Jombang.*

I. INTRODUCTION

Dermatologic emergencies encompass a diverse range of acute skin conditions that require prompt evaluation and treatment. Although most skin complaints do not pose an immediate threat to life, certain conditions such as Stevens-Johnson syndrome (SJS), toxic epidermal necrolysis (TEN), erythroderma, severe leprosy reactions, blistering diseases, and serious cutaneous infections can lead to devastating complications if not managed in a timely manner (Isnard et al., 2017). These conditions share a common clinical imperative: they demand rapid diagnostic assessment, immediate therapeutic intervention, and often inpatient admission for close monitoring of systemic involvement. In clinical practice, patients presenting with these conditions frequently arrive through the emergency department because they require urgent observation, initial therapeutic stabilization, and structured decisions regarding the necessity and duration of inpatient care. The recognition that dermatologic emergencies represent a meaningful proportion of ED visits has been documented across multiple geographic settings, with studies from Turkey, Morocco, Saudi Arabia, Switzerland, and India reporting that dermatologic complaints account for approximately 0.89% to 4.7% of all ED admissions (Acar et al., 2024; Al-Dhubaibi et al., 2025; Ronaldson et al., 2022). Despite this growing body of international evidence, the specific epidemiologic landscape of dermatologic emergencies at regional hospitals in Indonesia has remained largely unexplored, which limits the capacity of local healthcare administrators to plan services effectively.

Understanding the profile of patients who present with dermatologic emergencies through the ED is essential for evaluating service capacity, designing evidence-based clinical pathways, and ensuring that hospital resources are appropriately allocated to meet the demands of acute skin disease management. The pattern of dermatologic emergencies varies considerably across healthcare facilities depending on population characteristics, referral systems, and the availability of specialist dermatology services within the institution (Kedia et al., 2023). In Indonesia, particularly at regional district hospitals, data regarding the characteristics of dermatology patients requiring inpatient care through the ED remain notably limited. Previous investigations in other countries have reported that drug reactions, urticaria, cellulitis, and eczema or dermatitis are among the most common dermatologic emergency diagnoses (Acar et al., 2024; Kocaşaban et

al., 2022; Ögüt et al., 2022), and systematic reviews have further emphasized that diagnostic accuracy, hospitalization rates, and mortality outcomes vary substantially between settings (Algarni et al., 2025). However, the epidemiologic landscape in Indonesian regional hospitals has not been adequately explored, leaving a critical gap in the understanding of how dermatologic emergencies manifest in populations where diseases such as leprosy remain endemic and where access to specialist care may be limited by geographic and structural barriers.

RSUD Jombang is a district hospital serving both urban and rural populations in the Jombang Regency of East Java, Indonesia. The hospital functions as a referral center for surrounding primary care facilities and manages a broad range of acute medical presentations, including dermatologic emergencies. Evaluating the profile of dermatologic emergency cases at the ED of RSUD Jombang is necessary to illustrate the real case burden, including the distribution of age and sex, diagnostic patterns, emergency categories, length of stay, and patient outcomes. Such data provide an empirical foundation for improving clinical readiness, informing resource allocation, and strengthening the capacity of regional hospitals to manage acute dermatologic conditions effectively (Algarni et al., 2025). Furthermore, establishing a locally relevant epidemiologic baseline enables future comparative analyses across institutions and facilitates the development of context-appropriate clinical guidelines that reflect the unique disease patterns observed in Indonesian populations. This study aims to describe the profile of dermatologic emergencies at the Emergency Department of RSUD Jombang from 2023 to 2025.

II. METHOD

This retrospective descriptive study reviewed medical records of dermatology and venereology patients who presented through the Emergency Department (ED) of RSUD Jombang, East Java, Indonesia, and were subsequently hospitalized under the care of dermatology specialists between January 2023 and June 2025. The study was reported in accordance with the STROBE guidelines (Von Elm et al., 2008).

The study population comprised all patients with dermatologic or venereologic emergencies admitted through the ED during the study period. Total sampling was applied by including all medical records that met the inclusion criteria. Eligible patients had emergency or urgent dermatologic conditions, were admitted through the ED, and received inpatient care under a dermatology, venereology, and esthetics specialist (Sp.DVE). Patients referred as inpatient consultations from other departments were excluded.

Data collected included age, sex, admission date, primary diagnosis, diagnostic category, emergency category, length of hospital stay, and patient outcome. Diagnostic categories were grouped into drug reactions, dermatitis or eczema, leprosy or leprosy reactions, infections, autoimmune or blistering diseases, and others. Emergency status was classified as urgency or major emergency based on clinical severity.

Data were extracted using a standardized collection form and analyzed descriptively. Categorical variables are presented as frequencies and percentages, whereas continuous variables are summarized using mean, median, minimum, and maximum values. No inferential statistical analyses were performed because the study was designed to describe the epidemiological profile of dermatologic emergencies rather than evaluate associations between variables.

III. RESULTS

General Sample Characteristics

A total of 216 dermatologic emergency cases that presented through the ED and required inpatient admission were analyzed over the three-year study period. Among these, 118 patients (54.6%) were male and 98 patients (45.4%) were female, yielding a male-to-female ratio of approximately 1.2 to 1. The mean age of patients was approximately 51.6 years, with a median of 54 years and an age range spanning from 8 to 88 years, indicating that the case burden was predominantly carried by the adult population. The most common age group was 40 to 59 years, comprising 94 cases (43.5%), followed by 60 years and above with 70 cases (32.4%), 18 to 39 years with 49 cases (22.7%), and below 18 years with only 3 cases (1.4%). The predominance of middle-aged and older adults aligns with findings from previous studies in Turkey and Saudi Arabia, which reported mean ages of 42 to 46 years among dermatologic emergency patients (Acar et

al., 2024; Temel et al., 2023). The very small proportion of pediatric cases in this dataset is noteworthy, as it contrasts with studies from dedicated pediatric emergency settings where infectious and inflammatory dermatologic conditions are reported to be far more common (AlDosari et al., 2024; Ng et al., 2025). This discrepancy likely reflects the fact that RSUD Jombang does not have a dedicated pediatric emergency department and that pediatric dermatologic emergencies may be directed to pediatric rather than dermatology specialist services. The demographic characteristics of the study sample are presented in Table 1.

Table 1. Demographic Characteristics of Dermatologic Emergency Patients at the ED of RSUD Jombang (2023 to 2025)

Characteristic	n	%
Male	118	54.6
Female	98	45.4
Below 18 years	3	1.4
18 to 39 years	49	22.7
40 to 59 years	94	43.5
60 years and above	70	32.4

Distribution of Visit Timing

Based on the year of admission, the highest number of cases occurred in 2025 with 94 cases (43.5%), followed by 2024 with 70 cases (32.4%) and 2023 with 52 cases (24.1%). This progressive increase in case volume over the three-year period may reflect growing awareness of dermatologic emergency services among the local population, expanded referral networks from surrounding primary care facilities, or genuine changes in disease epidemiology within the catchment area of RSUD Jombang. The months with the highest number of cases were September 2025 with 16 cases (7.4%), October 2024 with 14 cases (6.5%), and February 2025 with 12 cases (5.6%). These monthly fluctuations suggest that dermatologic emergency presentations may exhibit seasonal or temporal patterns influenced by environmental factors, medication availability, or disease transmission cycles in the region. A comparable pattern of temporal variation has been described by Isnard et al. (2017), who observed fluctuations in dermatologic emergency consultation volumes over a six-year period in France, and by Temel et al. (2023), who documented a significant 63.1% decrease in dermatologic ED consultations during the COVID-19 pandemic period, illustrating how external events can substantially alter presentation patterns. The distribution of cases by year of admission is shown in Table 2.

Table 2. Distribution of Cases by Year of Admission

Year of Admission	n	%
2023	52	24.1
2024	70	32.4
2025	94	43.5

Diagnostic Profile

The most common diagnostic category was drug reaction or drug eruption with 60 cases (27.8%), followed by dermatitis or eczema with 49 cases (22.7%), leprosy or leprosy reaction with 34 cases (15.7%), infection with 33 cases (15.3%), others with 22 cases (10.2%), and autoimmune or blistering disease with 18 cases (8.3%). After standardization of diagnostic labels to reduce redundancy and inconsistency in the medical records, the most frequent specific diagnoses were erythroderma or erythrodermia with 43 cases (19.9%), leprosy reaction or Morbus Hansen with 33 cases (15.3%), Stevens-Johnson syndrome with 25 cases (11.6%), drug allergy with 16 cases (7.4%), herpes zoster with 14 cases (6.5%), bullous pemphigoid with 11 cases (5.1%), exfoliative dermatitis with 10 cases (4.6%), dermatitis herpetiformis with 8 cases (3.7%), and erythema nodosum associated with leprosy reaction with 6 cases (2.8%). These findings are partially consistent with prior studies reporting that drug reactions and urticaria are among the leading dermatologic emergency diagnoses worldwide (Acar et al., 2024; Kocaşaban et al., 2022; Ögüt et al., 2022), although the prominence of leprosy reactions and erythroderma in this dataset reflects the distinct epidemiologic context of Indonesia, where leprosy remains endemic in certain regions and where the spectrum of severe cutaneous drug reactions may differ from that observed in Western healthcare settings. The distribution of diagnostic categories is summarized in Table 3, and the standardized specific diagnoses are detailed in Table 4.

Table 3. Distribution of Cases by Diagnostic Category

Diagnostic Category	n	%
Drug reaction / drug eruption	60	27.8
Dermatitis / eczema	49	22.7
Leprosy / leprosy reaction	34	15.7
Infection	33	15.3
Others	22	10.2
Autoimmune / blistering disease	18	8.3

Table 4. Most Frequent Standardized Primary Diagnoses

Standardized Diagnosis	n	%
Erythroderma / erythrodermia	43	19.9
Leprosy reaction / Morbus Hansen	33	15.3
Stevens-Johnson syndrome	25	11.6
Drug allergy	16	7.4
Herpes zoster	14	6.5
Bullous pemphigoid	11	5.1
Exfoliative dermatitis	10	4.6
Dermatitis herpetiformis	8	3.7
Erythema nodosum (leprosy-related)	6	2.8

Emergency Category, Length of Stay, and Patient Outcomes

The majority of cases were classified as urgent conditions, comprising 140 cases (64.8%), while major emergencies accounted for 76 cases (35.2%). This proportion indicates that more than one third of dermatologic emergency inpatients at RSUD Jombang presented with conditions carrying meaningful potential for life-threatening deterioration, organ damage, or intensive care requirements. The classification of major emergencies included conditions such as Stevens-Johnson syndrome, severe erythroderma with systemic involvement, acute blistering diseases with extensive skin detachment, and leprosy reactions complicated by systemic inflammatory responses. The mean length of stay was 5.2 days, with a median of 4 days and a range of 1 to 58 days. The extended maximum length of stay likely reflects the complexity and severity of certain dermatologic conditions that require prolonged inpatient monitoring, particularly cases involving systemic involvement, secondary infections, or delayed therapeutic response (Saber et al., 2023). The most common patient outcome was clinical improvement, recorded in 192 cases (88.9%). There were 12 cases (5.6%) of death after 48 hours, 6 cases (2.8%) of death within 48 hours, and 6 cases (2.8%) with outcomes not recorded in the medical documentation. The overall mortality rate of approximately 8.4% among dermatologic emergency inpatients underscores the clinical seriousness of these presentations and aligns with mortality data reported by Saber et al. (2023), who found that cutaneous malignancies and severe drug reactions were the primary causes of death among dermatologic inpatients in an 11-year record-based observational study. The distributions of emergency categories and patient outcomes are presented in Table 5 and Table 6, respectively.

Table 5. Distribution of Emergency Categories

Emergency Category	n	%
Urgency	140	64.8
Major emergency	76	35.2

Table 6. Distribution of Patient Outcomes

Patient Outcome / Discharge Status	n	%
Improved	192	88.9
Death after 48 hours	12	5.6
Death within 48 hours	6	2.8
Not recorded	6	2.8

IV. DISCUSSION

This study characterized 216 dermatologic emergency cases that presented through the ED of RSUD Jombang and required inpatient admission over a three-year period from 2023 to 2025. The results demonstrate that the case burden was predominantly carried by middle-aged and older adults, with a slightly higher proportion of male patients compared to female patients. This demographic pattern is consistent with findings from Acar et al. (2024), who reported a mean age of 42 years among dermatologic ED patients in Turkey, and Temel et al. (2023), who observed a mean age of 44.4 to 46.1 years in their comparative evaluation of dermatologic emergency consultations during and before the COVID-19 pandemic. The slight male predominance in the present study contrasts with some international reports showing female predominance (Acar et al., 2024; Ronaldson et al., 2022; Widiyapriyatama et al., 2023) but is concordant with the observation by Al-Dhubaibi et al. (2025) that certain dermatologic emergency categories, particularly severe drug reactions and burns, may be more frequently observed among male patients in specific regional contexts. The age distribution finding that the 40 to 59 year group represented the largest proportion of cases (43.5%) suggests that dermatologic emergencies requiring inpatient care are more likely to affect individuals in midlife, potentially reflecting the cumulative effects of medication exposure, comorbidity burden, and occupational or environmental risk factors that accumulate over decades.

Drug reactions and drug eruptions constituted the largest diagnostic category in this study, accounting for 27.8% of all cases. This finding aligns with the broader literature indicating that adverse drug reactions represent one of the most important causes of acute dermatologic ED presentations, particularly because their clinical spectrum ranges from mild maculopapular eruptions to life-threatening conditions such as Stevens-Johnson syndrome and toxic epidermal necrolysis (Algarni et al., 2025; Isnard et al., 2017). The notable proportion of Stevens-Johnson syndrome cases (11.6%) in this dataset reinforces the need for heightened vigilance regarding medication history, early recognition of mucocutaneous warning signs, systematic evaluation of systemic involvement, and coordinated inpatient management for patients suspected of having severe cutaneous drug reactions. Prior research has emphasized that nondermatology physicians often have limited ability to recognize urgent skin diseases, with an accuracy rate of only 61.33% reported by Aljohani et al. (2023), which further highlights the importance of timely dermatology consultation in the ED setting. The prominence of drug reactions as the leading diagnostic category may also reflect pharmacologic practices in the region, including the availability and prescription patterns of medications known to carry higher risks of severe cutaneous adverse reactions, such as antiepileptics, antibiotics, and nonsteroidal antiinflammatory drugs.

Leprosy and leprosy reactions also emerged as a significant diagnostic group, representing 15.7% of all cases. This finding is particularly relevant within the Indonesian context, where leprosy remains endemic in several regions despite ongoing national elimination efforts. Indonesia continues to report among the highest numbers of new leprosy cases globally, and the Jombang Regency in East Java is situated within a province where leprosy transmission persists in certain districts. Leprosy reactions, including erythema nodosum leprosum and type 1 reversal reactions, can manifest as acute conditions that demand immediate therapeutic intervention to prevent irreversible nerve damage, permanent disability, and systemic complications (El Arabi et al., 2022). In this study, several leprosy reaction cases were compounded by nondermatologic comorbidities such as dehydration or chronic kidney disease, which underscores the complexity of managing these patients in a regional hospital setting where multidisciplinary coordination may be limited. The relatively high proportion of leprosy-related emergencies distinguishes the diagnostic profile at RSUD Jombang from those reported in European, Middle Eastern, and Australian studies, where leprosy is rare or entirely absent (Alshibani et al., 2024; Pelloni et al., 2019; Ronaldson et al., 2022). This distinction carries practical implications for clinical training and resource allocation, as healthcare providers in leprosy-endemic regions must maintain competence in recognizing and managing leprosy reactions as genuine dermatologic emergencies.

The finding that 35.2% of cases were classified as major emergencies is clinically significant and warrants careful attention from healthcare planners and clinicians alike. This proportion indicates that more than one third of dermatologic emergency inpatients presented with conditions that carried potential for life-threatening deterioration, organ damage, or intensive care requirements. While the majority of outcomes

were favorable, with 88.9% of patients showing clinical improvement, the recorded mortality of approximately 8.4% (including both deaths within and after 48 hours) confirms that dermatologic emergencies should not be dismissed as merely localized skin complaints. Saber et al. (2023) reported a crude mortality rate of 2.24% among dermatologic inpatients in an 11-year observational study, noting that cutaneous malignancies and drug reactions were the primary causes of death. The higher mortality observed in the present study may reflect the selection of more severe cases through the ED inpatient pathway, as well as differences in patient population, comorbidity burden, and healthcare infrastructure capacity between the study settings. Additionally, the distinction between deaths occurring within 48 hours and those occurring after 48 hours provides insight into the temporal dynamics of mortality in dermatologic emergency cases, suggesting that some deaths may be attributable to the initial severity of the presenting condition while others may result from complications arising during the course of hospitalization.

The median length of stay of 4 days and mean of 5.2 days indicate that dermatologic emergency cases necessitate meaningful inpatient monitoring and treatment, placing a quantifiable demand on hospital bed capacity and nursing resources. The maximum length of stay of 58 days warrants careful interpretation, as extended hospitalizations in retrospective studies may be influenced by disease severity, comorbidity complications, secondary infections, systemic involvement, slow therapeutic response, and nonclinical factors such as the need for extended observation or patient readiness for discharge. Kedia et al. (2023) proposed a severity grading system based on comorbidities and systemic involvement, which could offer a structured framework for future studies to categorize case complexity and predict length of stay more precisely. Algarni et al. (2025) reported an average hospitalization rate of 4.52% among dermatologic ED presentations in their systematic review, while Acar et al. (2024) found a hospitalization rate of 3.7% in a three-year retrospective study. The substantially higher hospitalization rate in the present study reflects the specific inclusion criterion that required all analyzed cases to be inpatient admissions, meaning that the denominator is limited to hospitalized cases rather than all ED presentations. This methodological distinction explains the apparent disparity and underscores the importance of clearly defining the study population when comparing results across different investigations.

The strengths of this study include the use of total sampling over a three-year period, which ensured that all eligible cases were captured and represented without selection bias that might arise from random sampling procedures. Additionally, the data were derived from patients who presented through the ED and were subsequently hospitalized under the care of dermatology specialists, thereby reflecting cases that were clinically judged to require inpatient observation and management rather than merely representing all dermatologic complaints seen in the ED. This specificity enhances the clinical relevance of the findings for service planning purposes. However, several limitations must be acknowledged. The retrospective single-center design relies on the completeness and consistency of medical record documentation, which may vary across different recording personnel and time periods. The study analyzed admission episodes rather than unique individuals, meaning that patients with repeated admissions could be counted as separate episodes, potentially inflating the case count for individuals with recurrent dermatologic conditions. Furthermore, the study did not evaluate standardized disease severity, specific therapeutic interventions, laboratory results, structured comorbidity profiles, or factors associated with mortality and extended length of stay. These limitations are comparable to those reported in similar retrospective studies of dermatologic emergencies (Acar et al., 2024; Algarni et al., 2025; Kocaşaban et al., 2022), and they point to clear directions for future research that could address these gaps through prospective designs and more detailed data collection protocols.

V. CONCLUSION

This study demonstrated that dermatologic emergencies requiring hospitalization at RSUD Jombang were predominantly associated with drug reactions, erythroderma, and leprosy-related reactions, with more than one-third of cases classified as major emergencies. Most patients were middle-aged or older adults, and the majority experienced clinical improvement following inpatient management. These findings provide baseline epidemiological data that can support clinical preparedness, resource allocation, and the

development of standardized emergency dermatology services in regional hospitals. Future studies should incorporate prospective designs and evaluate factors associated with disease severity, mortality, and length of hospital stay to strengthen evidence for clinical decision-making.

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