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Prospective evaluation of drug reaction with eosinophilia and systemic symptoms (DRESS)

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Abstract
Introduction: DRESS syndrome is a severe drug-induced reaction with delayed onset and multiorgan involvement. Data from North Africa remain limited.
Objectives: To describe the clinical and biological features of DRESS in a Moroccan study.
Methods: We conducted a retrospective study of 77 patients diagnosed with DRESS according to RegiSCAR criteria.
Results: Patients had a mean age of 48 years; 64% were women. The average latency was 27 days. Rash was universal, with erythroderma in 66%. Fever, mucosal involvement, and lymphadenopathy were each present in over half of cases. Hypereosinophilia was noted in 79%. Hepatic involvement was most common. Allopurinol was the leading culprit drug (34%). Corticosteroids were used in 88%, with a favorable outcome in 83%. Five deaths occurred.
Conclusion: Our results are consistent with international data but show a higher rate of erythroderma and a strong predominance of allopurinol, highlighting the need for targeted prevention.

Keywords: DRESS syndrome, allopurinol, eosinophilia, hypersensitivity, drug reaction

Introduction
Drug reaction with eosinophilia and systemic symptoms (DRESS) is a severe, idiosyncratic drug-induced hypersensitivity characterized by a latency of several weeks, multiorgan involvement and a mortality that can exceed 10% in some studies [1]. Although its epidemiology is now well described in Asia, Europe and North America, data from North-African populations remain scarce. We therefore analysed 77 consecutive Moroccan cases to explore whether demographic profile, clinical spectrum, laboratory abnormalities, culprit drugs and outcomes differ from patterns reported elsewhere. This study aims to analyze the epidemiological, etiological, therapeutic, and evolutionary characteristics of DRESS syndrome in our context.

Methodology
This retrospective study conducted over 15 years (January 2009 - January 2024) collected data from patients hospitalized for DRESS syndrome at Ibn Sina University Hospital's dermatology department. Patients were identified using regiSCAR criteria, with possible, probable, or certain cases included.

Results
We collected data from 77 patients, including 49 women (64%) and 28 men (36%), showing a clear female predominance with a male-to-female sex ratio of 0.57. The mean age was 48 years, with a range from 20 to 86 years.
The average time to symptom onset after drug intake was 27 days. In 80% of cases, the symptoms persisted for more than two weeks after discontinuation of the suspected drug.
Clinically, fever was observed in 62% of patients. A maculopapular rash was present in all patients, with 66% progressing to erythroderma (Figure 1 and 2). Mucosal involvement was noted in 53% of cases (Figure 3), and lymphadenopathy in 53%.
Hematological abnormalities included hypereosinophilia in 79% of cases, leukocytosis in 52%, and atypical lymphocytes in 17%. Visceral involvement was predominantly hepatic (71%), followed by renal involvement (27%), pulmonary involvement (12%), pancreatic

involvement in 2 cases, and elevated cardiac enzymes in one case.

According to the RegiSCAR scoring system, 29 cases were classified as definite, 33 as probable, and 15 as possible. The most frequently implicated drugs were allopurinol (34% of cases), carbamazepine (18%), phenobarbital (15%), and sulfasalazine (14%).

Treatment was mainly based on corticosteroid therapy, which was indicated in 88% of cases. The outcome was favorable in 83% of patients; however, five deaths were reported.

Discussion

Our study showed a marked female predominance (64%), similar to the 53–60% female share found in large pharmacovigilance and hospital registries [1, 2]. The mean age of 48 years mirrored the 47–50 year averages in those series, and the mean latency of 27 days corresponded closely to the median 24-day onset and the classical 2–6-week window described in reviews [1, 3, 4].

Clinically, a maculopapular eruption was universal, in agreement with the 99% prevalence reported in several studies [2, 4]. However, 66% of our patients progressed to erythroderma-well above the 20–30% usually quoted [3] - suggesting either later referral or a possible genetic predisposition to extensive cutaneous inflammation in our setting. Fever (62%) was lower than the 80–90% generally cited, while mucosal involvement (53%) and lymphadenopathy (53%) matched the upper limits of published ranges [2, 3, 5], indicating that absence of high fever should not preclude diagnostic suspicion in North-African patients.

Laboratory evaluation revealed hypereosinophilia in 79% of cases, exceeding the 60–70% frequency seen elsewhere [3], whereas leukocytosis (52%) was comparable and atypical lymphocytes (17%) remained below the reported 65-80% [2]. Visceral injury followed the expected hierarchy: liver (71% vs 60–80% in reviews), kidney (27% vs ≤30%), and lung (12% vs ≤25%) [2, 3], with isolated pancreatic and cardiac disturbances confirming their recognised but rare occurrence. Allopurinol was responsible for more than one-third of cases (34%), almost doubling its share in multinational RegiSCAR analyses (≈18%) and reinforcing the relevance of HLA-B*58:01 screening where feasible [1, 6]. Aromatic anticonvulsants (carbamazepine 18%, phenobarbital 15%) and sulfasalazine (14%) occupied the next ranks, replicating global culprit-drug rankings [3, 4]. Corticosteroids (0.5–1 mg kg^{-1} day^{-1} prednisone-equivalent) remain the recommended first-line therapy for moderate-to-severe DRESS [7, 8]; in our series they were used in 88% of patients, yielding an overall survival of 93.5%-virtually identical to the 93–96% survival reported in recent systematic reviews [1, 3]. All five deaths occurred in those with multiorgan failure, confirming the prognostic impact of visceral burden highlighted by prior studies [1, 3].

Collectively, our findings broadly corroborate international experience while drawing attention to three divergences: (i) a strikingly high rate of erythroderma, (ii) a greater prevalence of marked eosinophilia, and (iii) an outsized contribution of allopurinol. These differences may reflect genetic background, prescribing patterns or delayed referral and deserve confirmation in larger, prospective African cohorts integrating pharmacogenomics and long-term follow-up.

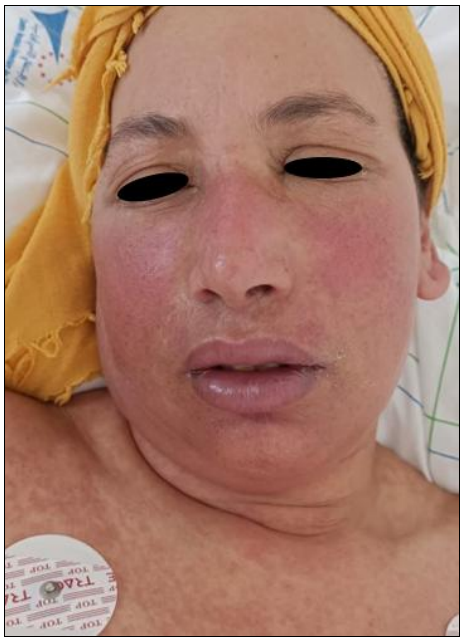

Fig 1: Rash with facial and eyelid edema in a case of DRESS syndrome induced by sulfasalazine

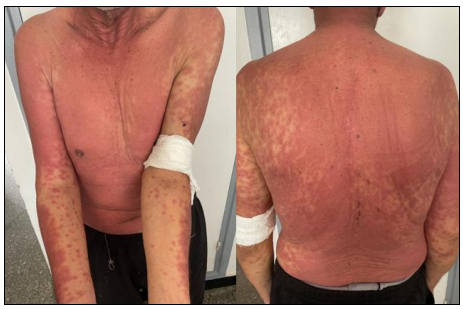

Fig 2 (a, b): Maculopapular rash in a case of DRESS syndrome induced by sodium valproate

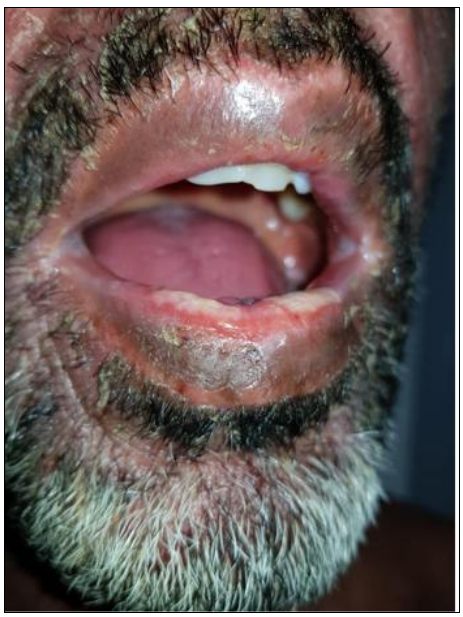

Fig 3: Erosive cheilitis in a case of DRESS syndrome induced by the imipenem/cilastatin combination

Conclusion

DRESS syndrome is a severe cutaneous adverse drug reaction with potential life-threatening and functional consequences. Timely diagnosis is facilitated by available

diagnostic criteria. Treatment mainly relies on corticosteroids in severe cases, and adherence to prescription guidelines is crucial for prevention.

The exceptional frequency of erythroderma and the dominant role of allopurinol highlight locally relevant risk factors that should inform prevention strategies-particularly judicious allopurinol use with HLA-B*58:01 screening-and underscore the need for early dermatologic assessment of extensive drug eruptions.

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Author's Contribution
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Conflict of Interest
Not available.

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References

1. Liang C, An P, Zhang Y, Liu X, Zhang B. Fatal outcome related to drug reaction with eosinophilia and systemic symptoms: a disproportionality analysis of FAERS database and a systematic review of cases. Front Immunol. 2024 Dec 16;15:1490334. DOI: 10.3389/fimmu.2024.1490334.
2. Alotaibi M. Drug-Induced Reaction With Eosinophilia and Systemic Symptoms: A Review. Cureus. 2023 Mar 2;15(3):e35701. DOI: 10.7759/cureus.35701.
3. Calle AM, Aguirre N, Ardila JC, Cardona Villa R. DRESS syndrome: A literature review and treatment algorithm. World Allergy Organ J. 2023 Apr 8;16(3):100673. DOI: 10.1016/j.waojou.2022.100673.
4. Awad A, Goh MS, Trubiano JA. Drug Reaction With Eosinophilia and Systemic Symptoms: A Systematic Review. J Allergy Clin Immunol Pract. 2023 Jun;11(6):1856-68. DOI: 10.1016/j.jaip.2023.02.035.
5. Chen HC, Wang RC, Tsai HP, Medeiros LJ, Chang KC. Morphologic Spectrum of Lymphadenopathy in Drug Reaction With Eosinophilia and Systemic Symptoms Syndrome. Arch Pathol Lab Med. 2022 Sep 1;146(9):1084-93. DOI: 10.5858/arpa.2021-0087-OA.
6. Cargioli RM, Nguyen B, Rashid H, Drake B, Fletcher S. Lady in Red: A Fatal Case of Drug Reaction With Eosinophilia and Systemic Symptoms. Cureus. 2025 Apr 14;17(4):e82235. DOI: 10.7759/cureus.82235.
7. Wang S, Kang Y, He C, Jin H. The systemic treatments for drug reaction with eosinophilia and systemic symptoms (DRESS) beyond corticosteroids. World Allergy Organ J. 2024 Jul 20;17(8):100935. DOI: 10.1016/j.waojou.2024.100935.
8. Verstegen RHJ, Phillips EJ, Juurlink DN. First-line therapy in drug reaction with eosinophilia and systemic symptoms (DReSS): Thinking beyond corticosteroids. Front Med (Lausanne). 2023 Feb 8;10:1138464. DOI: 10.3389/fmed.2023.1138464.

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