

# Allopurinol- induced Drug Reaction with Eosinophilia complicated with Renal Failure A Case Report

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## INTRODUCTION

Allopurinol-induced Drug reaction with Eosinophilia and Systemic Symptoms (A-DRESS) is a severe drug reaction characterized by rash, fever, and can lead to end-organ failure.

Allopurinol can cause DRESS syndrome in 2-6 weeks after starting allopurinol therapy. Incidence is 0.4% among allopurinol users with an estimated mortality of about 10%. South Asian descent has an association with specific leukocyte antigen type (HLA-B5801) with DRESS syndrome caused by allopurinol. Pathophysiology of allopurinol-induced DRESS syndrome seems to be related to the accumulation of oxypurinol a metabolite of allopurinol- in patients with impaired renal function.

## CASE PRESENTATION

Thirty-eight -year- old Korean male with medical history of hypertension, gout, and acute hemolytic uremic syndrome (AHUS) five years ago that required dialysis for three months, presented to the ER with complaints of generalized, pruritic, erythematous cutaneous eruptions with fever and diarrhea for two weeks. Patient took Benadryl without relief.

He was started on Allopurinol 4 weeks ago for gout prophylaxis. He denied any exposures, insect bites or recent travel exposure. He works as a vending machine loader and dispenser. Denied any family history.

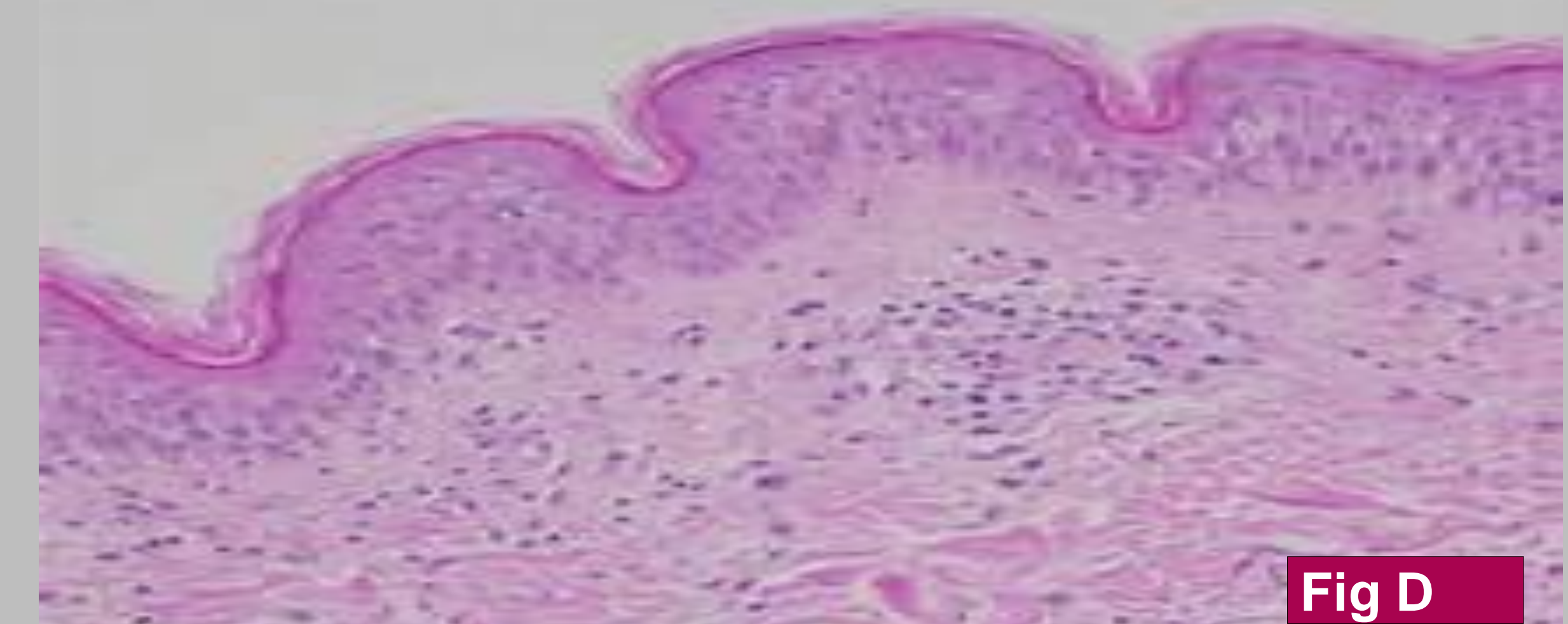
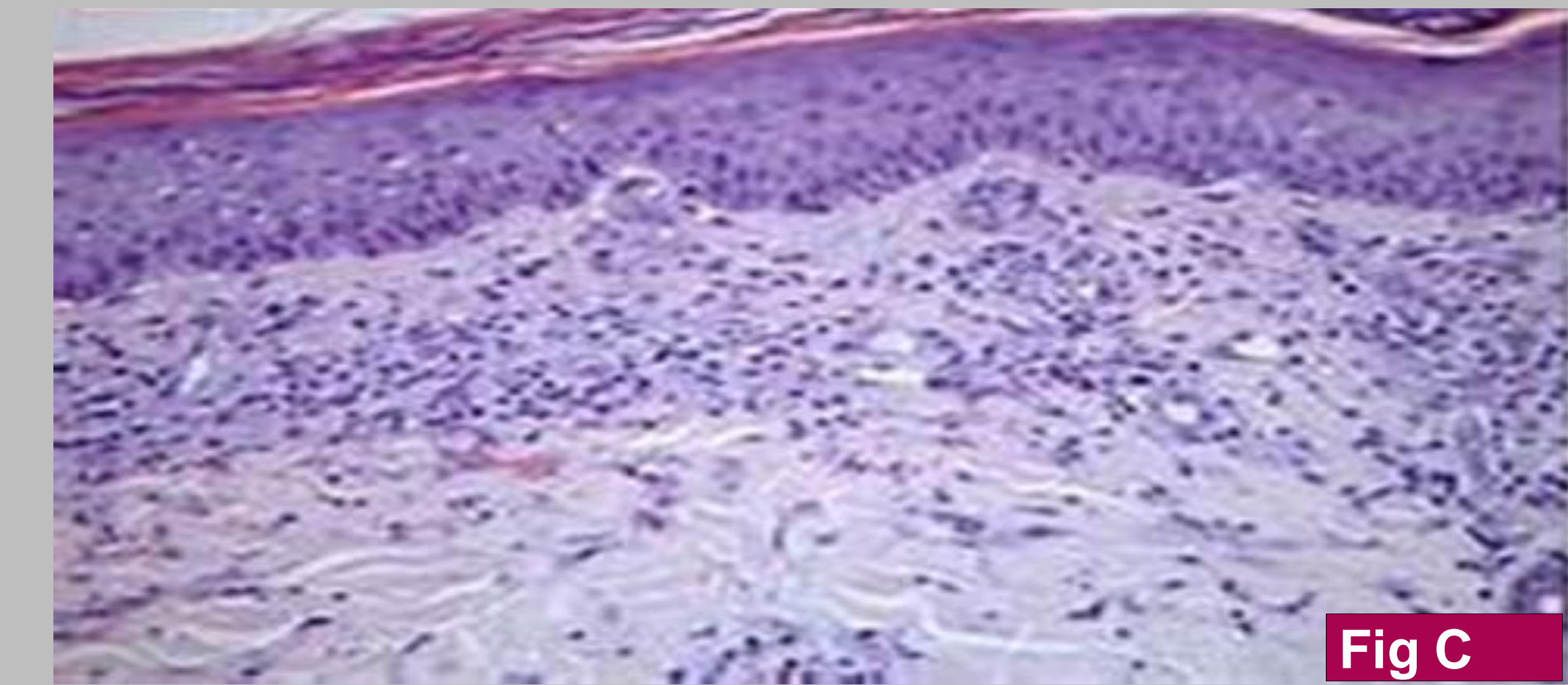
WBC	16x10 <sup>9</sup> /L	Lactate	3.3	Hep A,B,C	Negative
Hemoglobin	14	CRP	1.5	ANA, MPO	Negative
Creatinine	6.9	eGFR	9.11	HLA B27	Negative
CK	13143	ALT	229	Uric acid	8.3
Procalcitonin	3.3	AST	167	Calcium	6.9
C diff.	Negative	Ds DNA	Negative	C3, C4	Normal
Cultures (urine/blood)	Negative	Phosphorus	6.5	UARBC	4

Clinical examination showed multiple erythematous macules, papules, pinhead-sized follicular and non-follicular pustules on the face, trunk and proximal upper and lower extremities (fig A and B). Significant facial edema and non-pitting edema on both upper and lower extremities noted. No muscle tenderness or weakness noted.



Skin punch biopsy (Fig C and D) showed epidermis with spongiosis, necrotic keratinocytes, and acantholysis consistent with DRESS. Kidney biopsy demonstrated tubulointerstitial nephritis, diffuse global and focal segmental glomerulosclerosis.

The patient was treated with high dose intravenous steroids and subsequently switched to oral steroids. Several days after high dose of steroid therapy there was complete resolution of pustules with associated exfoliation and slow improvement of kidney function with full recovery with intermittent dialysis.



## CONCLUSION

- Allopurinol-induced DRESS syndrome is a severe drug reaction characterized by cutaneous drug eruptions, eosinophilia and systemic symptoms. It is associated with significant mortality.
- Physicians should be very cautious when prescribing allopurinol in high-risk Populations, especially among the Southeast Asian population.
- Screening for leukocyte antigen type (HLA-B5801) may help to identify the high-risk population.
- The use of allopurinol only for accepted indications with caution and adjusting its dose for renal insufficiency can decrease the incidence of severe drug induced complications.
- This case stresses the importance that physicians should be cautious when prescribing allopurinol in high-risk population

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