



Paracetamol Induced Acute Generalized Exanthematous Pustulosis- A Rare Case Report

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Abstract: Acute generalized exanthematous pustulosis (AGEP) is a rare cutaneous adverse drug reaction characterized by rapid occurrence of dozens to thousands pinhead-sized, non-follicular, sterile pustular eruptions. AGEP is infrequent with an incidence of one to five millions per year. There are only two previous reports of paracetamol induced AGEP in literature. The clinical course of AGEP is characterised by spontaneous resolution on drug withdrawal. Resolution is marked by a characteristic desquamation. Diagnosis of AGEP depends on morphology of skin lesions, presence of fever, laboratory and histopathological findings. Factors that favours the diagnosis of AGEP include onset of pustules within few hours or in few days after the causative agent is administered. The most frequent causative drugs are Aminopenicillins, ampicillin, amoxixillin, sulphonamides, pristinamycin, quinolones, hydroxychloroquine, terbinafin diltiazem. In some cases it is induced by bacterial, viral or parasitic infections. In our case, a 50 year male patient developed multiple pus filled lesions, burning sensations all over the body caused by administering paracetamol drug where, the lesions desiccated immediately after cessation of offending drug in two days leaving exfoliations. Upon diagnosis the white blood cell count was increased indicating lymphocytosis. He was administered with antihistamines, emollients and corticosteroids during his course of stay in hospital. Pustular rashes were reduced and patient recovered with treatment. Paracetamol is one of the most widely used safer drug worldwide, herein draws special attention that no drug is completely safe hence proper medication history interview would be recommended to overcome the drugs causing adverse drug reactions, that can be possibly dangerous and life threatening.

Keywords: AGEP, paracetamol, ADR, pustular eruptions, corticosteroids.

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I. INTRODUCTION

Acute generalized exanthematous pustulosis (AGEP) is often drug induced (>90%) and is characterized by the acute onset of non follicular sterile pustules on a diffuse erythematous base, fever, and neutrophilia.¹ This condition is characterised by an abrupt onset of pustules, fever and leukocytosis generally occurring within 48 hour of ingestion of suspected medication. Most cases have a spontaneous resolution in a single episode. In severe cases, there can be mucous membrane and systemic organ involvement. Typical histopathologic features include spongiform sub corneal and/or intraepidermal pustules, marked papillary oedema, and polymorphous perivascular infiltrate with neutrophils and exocytosis of some eosinophils. Cases with similar clinical characteristics have been described using different names, such as generalised toxic pustuloderma, blistering drug eruptions, and generalised pustular dermatitis.²

I.1 Clinical features

It is characterized by the rapid occurrence of dozens to thousands pinhead-sized, non-follicular, sterile pustules on a slightly edematous erythematous base, commonly with accentuation in the major flexures and usually accompanied by a facial edema, fever and leucocytosis.³ There is an itching or sometimes burning sensation. Mucosal involvement, especially orally, is reported in about 20%–25% of patients but mostly in a limited extension and only on one mucosal region.⁴

I.2 Pathogenesis

In the initial phase of the pathogenesis of AGEP, there is

Cut examination

- Pustules-Multiple, isolated and circinate shaped, 1-2mm
- Multiple hyperpigmented papules
- Multiple pustule, exfoliation and crusting
- Subungual hyperkeratosis +ve, onychodystrophy +ve
- Arms, forearms, elbows, axillae, trunk, thighs, inguinal region, face, scalp and ears and retroauricular area
- Both legs.
- Oral mucosa-hyperpigmentation + ve over buccal mucosa
- Nails



Fig 1. Desiccated lesion on legs and hand.

activation of drug-specific T-cells with subsequent migration of the cluster of differentiation 4 (CD4) and cluster of differentiation 8 (CD8) cells to the skin. The initial influx of CD8 cytotoxic T-cells results in apoptosis of keratinocytes and the formation of sub-corneal vesicles. The infiltrating CD4 cells and keratinocytes release Interleukin 8 (IL8 or chemokine (C-X-C motif) ligand 8 (CXCL-8), which results in the recruitment of neutrophils and Granulocyte-macrophage colony-stimulating factor (GM-CSF), which prevents apoptosis of neutrophils. This results in the conversion of vesicles into pustules. CD4 cells also release Interferon (IFN) gamma, which stimulates keratinocytes to secrete CXCL-8. Resident Langerhans cells may present drug antigens to CD4 cells and keratinocytes may act as antigen presenting cells to CD8 cells, thereby augmenting the neutrophil-mediated inflammatory response.²

I.3 Case presentation

A 50-year-old male, was admitted in Dermatology department of a tertiary care hospital with the chief complaints of multiple pus filled lesions (8 days). As per previous medication history he was prescribed with paracetamol (Antipyretics) and ondansetron (Antiemetic) for fever and vomiting which led to development of burning sensation in hands, feet, and pus filled lesions over fore-arms, trunk, legs, soles, face, ears and scalp, the lesions desiccated in 2 days leaving exfoliations. On examination patients was conscious/coherent/cooperative, BP-110/70mmHg, PR-86/min, P/A-soft, well-built and nourished CVS- SIS2+, R/S-BAE+. The desiccated lesions on legs and hands (Figure 1).

1.4 Laboratory investigations

White blood cell count-15.69 cells/mcL(4,500 to 10,000 cells/mcL) which indicated LYMPHOCYTOSIS. The abnormalities observed are mentioned below (Table 1).

Table 1. Abnormalities observed in Complete blood Cholesterol

S.no	Types	Day 2	Reference range
1.	Triglycerides	125 mg/dl	<100 mg/dl
2.	High density cholesterol	21.8 mg/dl	40-59 mg/dl
3.	Low density cholesterol	119 mg/dl	<100 mg/dl

Following laboratory investigations were also performed and no fluctuations were observed. Complete blood picture with erythrocyte sedimentation rate, complete urine examination, Random blood sugar, Liver function test with enzymes, Renal function test with serum electrolytes, Electrocardiogram, Chest X-ray, Ultrasound of abdomen.

1.5 Provisional Diagnosis

Pustular psoriasis. Drug induced.

1.6 Conformational Diagnosis

Acute generalized pustular psoriasis (Paracetamol).

1.7 Treatment

During the course of stay in the hospital, patient was administered with the following medications (Table 2)

Table 2. Supportive treatment given to patient during his course of stay in hospital

S. No	Brand name	Generic name	Dose	Frequency
1	Inj. Taxim	Cefotaxime	1gm	1-0-1 (D13)
2	Inj. Pantop	Pantoprazole	40mg	1-0-0
3	Inj. Avil	Pheniramine	1cc	1-0-1
4	Liq. Paraffin	Paraffinum	E/A	1-0-1
5	Protar k shampoo	Protar k	E/A	Twice/week
6	Inj.H Albumin	Albumin (Human)	20% (100ml)	1-0-0
7	Inj. Decadron	Dexamethasone	2cc	1-0-0
8	Tab. Atarax	Hydroxyzine	25mg	1-0-0
9	Tab.Wysolone	Prednisolone	30--10mg	1-0-1
10	Tab. Augmentin	amoxicillin/clavulanate potassium	625mg	1-0-1
11	Tab. Ofloxacin	Ofloxacin	200mg	1-0-1
12	Tab. Taxim-O	Cefotaxime	200mg	1-0-1
13	Oint. Soframycin	-----	E/A	1-0-1
14	Tab.BC	B complex	1 tab	0-1-0
15	Tab. Vit C	Ascorbic acid	1 tab	0-1-0
16	Tab. Ca	Calcium	1 tab	0-1-0
17	Tab. IFA	Iron+Folic Acid	100mg+500mcg	0-1-0
18	Cap.A&D	Vitamin	1 tab	0-1-0



Fig 2. Recovery of patient's legs and hands after treatment.

2. DISCUSSION

AGEP is often a drug induced condition, and was originally classified as a form of pustular psoriasis with symptoms of pustules, exfoliators and hyperpigmentation over the body.¹ Characteristically, the skin reaction arises rapidly within a few hours and tends to resolve quickly within several days after cessation of the offending agent or may resolve spontaneously.¹ The rash mostly begins in the intertriginous areas or in the face then spreads diffusely and is often described as a burning or itching sensation. In about 20 % of cases, mucous membranes are involved but tend to be mild and usually limited to the oral cavity. Discontinuation of the causative agent is the main objective. In this case the patient was prescribed with Paracetamol for fever which immediately showed the reactions as burning sensation all over the body but unknowingly the patient continued using the drug which led to severity in the form of pustules and exfoliation thus the drug was withdrawn after occurrence within 2 days. Patient was hospitalised for a period of one month for which following medications were administered as a supportive therapy i.e. Antihistamines, Emollients and Corticosteroids and was recovered by the end of treatment (Figure 2)

3. CONCLUSION

Paracetamol is common and seems to be a safe drug used in

7. REFERENCES

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the general population, though devoid of serious side effects but possible with severe adverse drug reactions. This draws special attention that no drug is completely safe hence proper medication history interview would be recommended to overcome. On the other hand Medical practitioners and clinicians must be more cautious while prescribing and be aware of the drugs causing adverse drug reactions, that can be possibly dangerous and life threatening.

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5. AUTHORS CONTRIBUTION STATEMENT

Neelam. I conceived the idea and guided throughout the study and also reviewed the manuscript. K. Anusha collected the case, evaluated the result and drafted the manuscript.

6. CONFLICTS OF INTEREST

Conflict of interest declared none.

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