



Case Report

A Case Report on Paracetamol-Induced Periorbital Edema

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ABSTRACT

Background: Paracetamol is a one of the commonly used over-the-counter analgesic & antipyretic drug. Paracetamol hypersensitivity can vary from immediate Type I hypersensitivity reactions such as angioedema, urticaria and anaphylaxis, which are probably immunoglobulin E (IgE)-mediated, to delayed Type IV reactions such as fixed-drug eruptions, stevens-Johnson syndrome, baboon syndrome & toxic epidermal necrolysis.

Case Report: This is a case of 28 years old female, with no known allergies or pre-existing medical conditions, came to dermatology OPD with acute onset of swelling around the eyes & itching all over the body shortly after consuming paracetamol 650mg for fever. No other medication was taken. Next day, she consulted in dermatology OPD. On examination, vital parameters were stable. Periorbital edema & rashes over the entire body were present. Proper treatment was given to the patient.

Discussion: Paracetamol hypersensitivity is mostly diagnosed based on the patient's clinical history. Hypersensitivity reactions to paracetamol are most commonly mediated through the pharmacological action of COX-1 inhibition but may also be paracetamol-specific IgE or T cells mediated.

Conclusion: Since paracetamol allergic reactions are rare, these could go unnoticed as the reason for sudden hypersensitivity, which might cause a delay in diagnosis.

Keywords: Paracetamol, periorbital edema, hypersensitivity reactions.

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INTRODUCTION

Angioedema is an abrupt swelling of skin & mucous membrane of lips, face, mouth, eyes, throat & larynx. If the mucosa of upper airway is affected, it can lead to life threatening asphyxia. Generally, develop in minutes to

hours & resolved in 24-48 hours¹. Although the exact mechanism for occurrence of angioedema after paracetamol ingestion is still to be fully elucidate, but it is presumed to be a hypersensitivity reaction to a toxic metabolite of paracetamol. Despite paracetamol being metabolized to highly reactive metabolites, these reactions are reported infrequently because it is only a weak inhibitor of prostaglandin synthesis¹.

Paracetamol is one of the most common worldwide used analgesic & antipyretic drug. It is easily available over the

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counter drug². Hypersensitivity reactions to paracetamol occurs only in 1.6% of all the patient's taking paracetamol & range from immediate Type-I to delayed Type-IV. Immediate Type-I reactions such as angioedema, urticaria & anaphylaxis, which are likely immunoglobulin E (IgE) mediated. Delayed type IV reactions such as fixed-drug eruptions, Stevens-Johnson syndrome (SJS), toxic epidermal necrolysis (TEN) & baboon syndrome which are likely T cell mediated³.

Mechanism for paracetamol hypersensitivity⁴

	Immediate Paracetamol allergy	Delayed Paracetamol allergy	Cyclooxygenase Hypersensitivity
Mechanism	IgE mediated	T cell mediated	Increase Leukotriene production
Incidence	Rare	Rare	1.6%
Onset	<24 hours	>24 hours	<24 hours
Syndrome	Urticaria, angioedema	SJS, TEN	NSAID-exacerbated respiratory disease
Diagnosis	Oral challenge test	Unknown	Oral challenge test

CASE REPORT

A 28-year-old female, with no known allergies or pre existing medical conditions, presented to dermatology OPD of BPS GMC, Khanpur Kalan, Sonipat with acute onset of swelling around the eyes & itching all over the body shortly after consuming paracetamol 650mg for fever. Patient gave history of fever one day back for which she took tablet paracetamol 500 mg from the local PHC. Within 30-35 minutes of taking paracetamol, she developed swelling around the eyes & itching all over the body. No other medication was taken. After this patient didn't took paracetamol again in night for fever. Next day, she consulted in dermatology OPD.



OBSERVATIONS

On examination, the vital parameters were stable. Periorbital edema was present which was acute in onset, presented bilaterally, not associated with any conjunctival hyperemia. Maculopapular rashes present over the whole body, which were slightly elevated & red in colour. Causality assessment was done as per the WHO-UMC scale, which showed that the adverse events were probably caused due to paracetamol.

TREATMENT

Suspecting an adverse event, the administration of paracetamol was stopped. Injection Avil 1 ampule(45mg) & injection dexamethasone 1cc(4mg) stat dose was given. Tablet levocetirizine(5mg) + montelukast(10mg) once at night & tablet prednisolone (20mg/day) in the morning was

given to the patient for 5 days. Symptoms subsided after taking the treatment for one day. Patient was advised to avoid paracetamol intake in future.

DISCUSSION

Paracetamol hypersensitivity is mostly diagnosed based on the patient's clinical history. Paracetamol is a mild inhibitor of cyclooxygenase 1 (COX-1). Hypersensitivity reactions to paracetamol are most commonly mediated through the pharmacological action of COX-1 inhibition but may also be paracetamol-specific IgE or T cells mediated⁴. Cyclooxygenase inhibition stops the conversion of arachidonic acid to prostaglandins and thromboxane which results in anti-inflammatory effect. The resultant increase in free arachidonic acid converted to cysteinyl leukotrienes. These leukotrienes have potential to cause hypersensitivity reactions such as angioedema, urticaria and bronchospasm⁵. Angioedema, urticaria, and anaphylaxis are examples of immediate type I hypersensitivity reactions to paracetamol that are probably immunoglobulin E (IgE) mediated. Delayed type IV reactions include fixed-drug eruptions, Stevens-Johnson syndrome, and toxic epidermal necrolysis, which are likely T cell mediated⁶.

CONCLUSION

Though rare, adverse drug reactions to paracetamol can be dangerous & present as life-threatening event. Therefore, clinicians must be more cautious while prescribing paracetamol specially in extreme age (children's & elderly persons) & also public should be more educated regarding the adverse effects of drugs.

REFERENCES

1. Leeyaphan C, Kulthanan K, Jongjarearnprasert K, Dhana N. Drug-induced angioedema without urticaria: prevalence and clinical features. Journal of the European Academy of Dermatology and Venereology. 2010 May 5;24(6):685–91.
2. Popiolek I, Piotrowicz-Wójcik K, Porebski G. Hypersensitivity reactions in serious adverse events reported for paracetamol in the EudraVigilance Database, 2007–2018. Pharmacy. 2019 Jan 17;7(1):12.
3. Rutkowski K, Nasser S, Ewan P. Paracetamol Hypersensitivity: Clinical Features, Mechanism and Role of Specific IgE. International Archives of Allergy and Immunology. 2012 Jan 1;159(1):60–4.
4. Thompson G, Blundell C, Lucas M. Paracetamol allergy in clinical practice. Australian Journal of General Practice. 2019 Apr 1;48(4):216–9.
5. Teles A, Ribeiro MF, Branco MP, Araujo CA, Vieira TC. Paracetamol Allergy: A Case of a 9- Year-Old Female with a History of Atopy. Pediatric Allergy Immunology and Pulmonology. 2021 Jun 16;34(2):80–2.
6. Pham DL, Kim JH, Trinh THK, Park HS. What we know about nonsteroidal anti-inflammatory drug hypersensitivity. The Korean Journal of Internal Medicine. 2016 May 1;31(3):417–32.