PARACETAMOL ALLERGY: A CASE REPORT

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ABSTRACT

Adverse reactions to medications prescribed or administered in dental practice can be worring. Others, such as allergic and pseudoallergic reactions, are generally unpredictable and unrelated to normal drug action. Paracetamol and other NSAIDs ranks after antibiotic drugs in the world as a potential hypersensitivity occur. It is usually oral mucosa by allergic reactions more sensitive than skin reactions and hypersensitivity reactions may lead to intense erythematous lesions of the attached gingiva. In this case report with a diagnosis of a rare allergy paracetamol combination preparations 51-year-old female patient presented.

KEYWORD: Paracetamol allergy, Allergic reactions, Analgesic intolerance

INTRODUCTION

Paracetamol is used throughout the world due to its analgesic and antipyretic effects. It is a drug widely available with and without prescription. However, paracetamol toxicity is known to be the most common cause of drug-related liver failure. Repeated incorrect treatments, unintentional errors or intentional intake of the drug may cause the development of hepatic toxicity.[5]

In 2005, 28 million drugs containing a paracetamol component were distributed. In 2003, prescriptions were obtained for 89 million paracetamol derivatives. Despite regular use of this drug, many cases of over-sensitivity have been reported. In 2009, the American Toxicology Association reported that 401 cases on the toxicology data system were from paracetamol and paracetamol-derived drugs.[2,3]

Associated with current increasing use of drugs, analgesics are the most significant cause of sensitivity reactions following antibiotics.[4]

Dentistry constitutes a significant area of drug use. When infections which form in the oral cavity are not treated appropriately, they can become extremely painful and may even create a threat to life. In the treatment of infections, there is a need for antimicrobial agents in addition to surgical operations.[5]

Most disorders of the teeth and related tissues are caused by inflammation. If the source of the problem is inflammation, an anti-inflammatory derivative drug should be used. Generally, in acute pain in the oral cavity, non-narcotic (non-steroidal anti-inflammatory drugs [NSAID] and paracetamol) derivative drugs are used. NSAIDs exhibit anti-inflammatory, analgesic and partial anti-pyretic effects. The efficacy of these drugs is shown through cyclooxygenase (COX-1, COX-2) inhibition.[6,7]

NSAIDs frequently used in dentistry include ibuprofen, acetylsalicylic acid, diflunisal, etodolac, mefenamic acid, ketoprophone, ketorolac, flurbiprofen and paracetamol.[8] Paracetamol is used mostly for its analgesic effect and is the most commonly used NSAID for pregnant patients and children. Recent studies have shown paracetamol to have an effect on the brain and spinal cord by inhibiting COX-3.[9] It does not damage thrombocytes or the gastrointestinal system. As paracetamol is metabolised in the liver, it can cause toxicity in patients with liver disease.[10]

In comparison with other drugs, over-sensitivity reactions are caused by paracetamol less often. It has generally been reported to cause urticaria, angio-oedema, maculopapillary rash, bronchospasm, rhinitis, and occasionally, vasculitis, toxic epidermal necrolysis and anaphylactic reactions.[5,11,12]

Patients who experience allergic reactions to NSADs are more predisposed to have a reaction to paracetamol. While there are those who advocate that paracetamol allergy occurs through IgE reactions, the other possibility has focussed on the inhibition of COX-3 enzyme by the drug.[13]
Several methods and applications are used in the determination of allergic reactions. Skin tests used for allergies are used to determine sensitivity against an allergen. These are the most important diagnostic tools as they are easy to apply, low-cost and are reliable.\[14\]

Apart from the paracetamol preparations used in Turkey, there are several analgesic drugs which are combined with paracetamol. The case is here presented of a patient who developed drug allergy to the combined use of paracetamol-chlorpheniramine-pseudoephedrine-dextromethorphan.

**CASE REPORT**

A 51-year old female presented at the Periodontology Clinic of Dicle University Dentistry Faculty with the complaints of a burning sensation in the mouth, swelling in the gingiva and bleeding of the gums. In the detailed anamnesis taken from the patient, it was learned that 2 days previously she had consulted a doctor with the complaints of influenza and after examination had been prescribed with Gripamol 325 mg (Paracetamol, Koçak, Tekirdağ, Turkey). The patient stated that she had not previously experienced any allergic reaction to any medication. Informed consent was obtained from the patient. In the oral examination, there was seen to be an epithelial rash on the skin around the mouth and cracks had formed on the lips and there was redness and swelling of the hands (Fig. 1, 2).

![Figure 1: Rash on the skin around the mouth.](image1)

The patient also reported itching pain on the body. In the intra-oral examination, erythemous lesions were seen in the gums which were of a soft consistency and there was inflammation, with oedema and discharge (Fig. 3).

![Figure 2: Redness and erythema in the hands.](image2)

![Figure 3: Erythemous lesions and inflammation in the gingiva of the lingual region of the lower jaw.](image3)

Following a detailed examination, periodontal treatment was applied to the patient who was then referred to the Medical Faculty Dermatology Department for allergy testing. As reaction to the paracetamol combined preparations was suspected, a skin prick test was applied (Perfalgan 10 mg/mL, Bristol Myers Squibb, New York, USA). Results in the applied prick test of swelling and redness reactions ≥ 3mm were evaluated as positive. An allergic reaction associated with paracetamol was determined as a result of the prick test. The patient was told that it was necessary to terminate the use of
paracetamol. It was also recommended that care was taken against allergen food and drink and that the doctor should prescribe anti-allergic drugs. A follow-up appointment was made for 15 days later.

At the follow-up examination, the rash around the mouth and the redness and swelling in the hands were observed to have recovered (Fig. 4,5).

DISCUSSION

Most allergic reactions are seen with symptoms in the form of skin rash, urticaria and angio-oedema. Lesions which do not seem to be dangerous may transform to life-threatening systemic reactions, so allergic reactions require emergency interventions. The onset of symptoms is rapid and with rapid progression can cause severe reactions. Paracetamol-related sensitivity reactions are seen less frequently compared to reactions to other analgesic drugs. For patients with aspirin allergy, an alternative drug should be recommended. High-dose paracetamol and aspirin in particular interact with other NSAIDs.

Reactions associated with NSAIDs and paracetamol have been reported to be seen more often in asthma patients. Although gender has no effect on atopy and paracetamol, greater sensitivity has been reported in males.

The development of drug-related over-sensitivity reactions constitute significant causes of morbidity and mortality. Paracetamol allergy is seen at lower rates in children than in adults. The most common clinical findings of allergic reactions are urticaria, angio-oedema, rhinitis and asthma. Diagnosis is confirmed by skin prick tests. In the current patient, as they emerged in the late stage, symptoms were seen more as skin rash, redness in the hands and swelling and oedema in the gingiva.

Skin symptoms have been reported in 97.6 % of reactions which develop associated with paracetamol, in 10 % of anaphylactic shock, as early symptoms in 30.9 % of cases and as late symptoms in 63.1 %. In other studies, urticaria, angio-oedema and skin symptoms have been most commonly seen, followed by respiratory symptoms and anaphylactic reactions have been reported to develop more rarely.

In the current case, symptoms emerged in the late stage following the use of paracetamol preparations. As an adverse reaction could develop against other cyclooxygenase inhibitors, this patient should not use COX-1 and COX-2 inhibitors.

In patients with suspected drug allergy, determination with the appropriate allergological tests is of great importance. Otherwise, patients may unnecessarily avoid drugs to which they do not have an actual allergy and it may cause inappropriate treatment with the use of unnecessary drugs.

Generally, the oral mucosa is more sensitive to allergic reactions than the skin and extremely sensitive reactions may cause intense erythemous lesions in the gums. In drug-related allergies, when the drug is terminated the allergic symptoms start to recover. In the current case, the rash which had formed on the skin and the redness in the hands were observed to have recovered after 15 days.

With the presentation of this case it was aimed to emphasise the importance of diagnostic allergy tests in adults who could develop an adverse reaction to paracetamol and that tests should be planned for the use of different drugs in cases determined with an allergy as a result of the tests. These tests are of great importance in respect of preventing sensitivity reactions which the patient could experience in the future.
REFERENCES


