Visual Journal of Emergency Medicine 15 (2019) 100561

Contents lists available at ScienceDirect

Visual Journal of Emergency Medicine

journal homepage: www.elsevier.com/locate/visj

Visual Case Discussion

Facial flushing and rash without urticaria after N-acetylcysteine administration

Nena Bowman[a,*], Donna Seger[b,c]

[a] Tennessee Poison Center, Vanderbilt University Medical Center, Nashville, TN, United States
[b] Clinical Medicine and Emergency Medicine, Vanderbilt University Medical Center, Nashville, TN, United States
[c] Tennessee Poison Center, Nashville, TN, United States

ARTICLE INFO

Keywords:
N-acetylcysteine
Facial Flushing
Rash
Acetaminophen

A 16 year-old female took a “handful” of acetaminophen. Thirty minutes later she took another “handful” of tablets. Six hours after the second ingestion, she vomited. She was in good health and on no medicines. She had a history of depression and intermittent purges. Physical exam was unremarkable. Serum acetaminophen was 173.9 mcg/mL 8 h after the ingestion. Intravenous N-acetylcysteine (N-ac) started at 2230, with the standard 21 h protocol. After the load dose, the patient had facial flushing and swelling with a rash on her neck. N-ac was given for 101 h with AST 3708, ALT 5880, Bili 2.6, and INR 2.1, 80 h post exposure (72 h post N-ac initiation). Six hours after the N-ac was discontinued, symptoms resolved. Flushing has been reported in 4.7–30.2% of patients receiving IV N-ac in both pediatric patients and adults.[1] Although many reported rashes are pruritic, the patient did not experience this, (Fig. 1).

* Corresponding author.
E-mail address: nena.j.bowman@vumc.org (N. Bowman).

https://doi.org/10.1016/j.visj.2019.100561
Received 8 January 2019; Accepted 10 January 2019

Fig. 1. Facial flushing and rash without urticaria after n-acetylcysteine administration.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.visj.2019.100561.

References

1. Yamamoto T, Spencer T, Dargan PI, Wood DM. Incidence and management of N-acetylcysteine-related anaphylactoid reactions during the management of acute paracetamol overdose. *Eur J Emerg Med.* 2014;21(February (1)):57–60. https://doi.org/10.1097/MEJ.0b013e328364eb22.

Questions

1. What percentage of patients (adult and pediatric) experience facial flushing and swelling with or without rash with administration of N-acetylcysteine?
   a. 7 to 25% of patients
   b. 32 to 42% of patients
   c. 1 to 2% of patients
   d. 85% of patients
2. What is one of the most important steps in the management of anaphylactoid reactions (facial flushing and swelling with or without rash) with administration of n-acetylcysteine?
   a. Antibiotics
   b. Steroids
   c. Stop the N-acetylcysteine
   d. Acetaminophen

Answers

1. 7 to 25% of patients. Explanation: Anaphylactoid reactions have been reported in 7 to 25% of pediatric and adult patients administered N-acetylcysteine. These reactions typically occur 60 minutes after initiation of N-acetylcysteine.

2. Stop the N-acetylcysteine. Explanation: Stop the N-acetylcysteine and treat for an anaphylactoid reaction. Anaphylactoid and anaphylaxis reactions are different in that anaphylactoid reactions are event based (typically dependent on rate of administration and dose of drug) and do not signify an allergy.