

ASSOCIATED RISK FACTORS OF ANAPHYLACTOID REACTIONS TO INTRAVENOUS ACETYLCYSTEINE INFUSION IN PATIENTS WITH ACETAMINOPHEN OVERDOSE

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Introduction: frequency of ADRs to acetylcysteine (NAC) varies from 3-9 % to 48% in different populations. Factors such as asthma and low acetaminophen concentration have been reported to be associated with ADRs. Previous studies have reported that women are more likely to develop ADRs to drugs. The aim of the current study is to investigate the frequency, features and associated risk factors of ADRs to intravenous infusion of NAC in patient with acetaminophen overdose.

Method: an ethically approved prospective study was conducted on patients with acetaminophen overdose admitted to a toxicology unit who required NAC treatment. Information concerning history of allergy, asthma and previous ADRs to NAC was obtained at admission. All patients were monitored for features of ADRs. Patients were classified by severity of ADRs: nil or minimal (only gastrointestinal), moderate (mild flushing, mild dyspnoea or mild chest pain), and severe (generalised flushing, bronchospasm, severe chest pain required temporary cessation of NAC infusion). Associated risk factors of ADRs were examined by univariate and multivariate (binary logistic regression) analysis.

Results: 169 patients (58% women) aged 37 (35-39) y had complete data. ADRs were minimal in 101 (59.8%), moderate in 51 (30.2%), and severe in 17 (10.1%). Reported ADRs were nausea (70.4%), vomiting (60.4%), flushing (24.9%), pruritus (20.1%), dyspnoea (13.6%), chest pain (7.1%), dizziness (7.7%), fever (4.7%), wheeze and bronchospasm (7.1%) and rash and urticaria (3.6%). Serum acetaminophen concentration (mg/l) was significantly lower in patients with severe ADRs: median (IQR) 46 (0-101), moderate: 108 (54-178), and minimal 119 (77-174), p=0.002. Low acetaminophen concentration, female gender (p<0.05) and family history of allergy (p<0.01) were independent risk factors of ADRs.

Conclusion: adverse reactions to IV NAC are common. Female gender, having a family history of allergy and low acetaminophen concentration are found to be independent risk factors of ADRs to intravenous NAC infusion. The mechanism of protective effect of acetaminophen and gender difference in ADRs to NAC requires further study.