Non-ionic iodinated contrast media-induced anaphylaxis – Case series

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Aims: To assess the prevalence and describe the cases of anaphylaxis to iodinated contrast media (ICM), evaluated in our Drug Allergy Unit (DAU) in the last 6 years.

Methods: Retrospective analysis of medical records of patients assessed in our DAU for suspected hypersensitivity reactions (HSR) to ICM between Jan/10 and Dec/15 (n=54). Skin prick tests (SPT) were performed with potassium iodate (PI), iodopovidone, and a panel of available non-ionic ICM (iohexol, ioversol, iobitridol, iopromide, iomeprol, iodixanol, amidotrizoate, meglumine); intradermal tests (IDT) were also performed with ICM diluted 1/100-1/10, and undiluted (not in all cases).

Results: Eighteen (33.3%) patients presented with anaphylaxis (10 females, median age 65.5 years, interquartile range 43.0-72.0 years). The clinical manifestations were respiratory (n=15, 83.3%), mucocutaneous (n=12, 66.7%), cardiovascular (n=11, 61.1%) and gastrointestinal (n=5, 27.8%). No fatal outcomes occurred. Suspect ICM were iobitridol (n=4, 22.2%), iopromide (n=3, 16.7%), ioversol (n=2, 11.1%), iomeprol (n=1, 5.6%), iohexol (n=1, 5.6%), and unknown in 7 (38.9%) cases. SPT with iodopovidone and PI were all negative. One patient (anaphylactic shock to iopromide) had a positive SPT (iopromide). In IDT, 4 patients had positive test results to ICM at 1/10 (including the suspect): 1) iopromide and iomeprol; 2) ioversol, iobitridol, iodixanol and amidotrizoate; 3) iobitridol and iopromide; 4) iohexol. The patient with anaphylactic shock to iopromide reacted at 1/100. Other 8 patients had positive IDT only to undiluted solution, with at least 1 of the ICM tested (including the suspect); 6 of these patients were tested to other undiluted ICM with negative results.

Discussion: Skin testing with a panel of ICM is recommended by the ENDA group in these patients, not only to confirm the culprit drug but to assess cross-reactivity and find safe alternatives. The ENDA position paper (2013) makes a weak recommendation to avoid undiluted ICM for skin tests as it may be irritative. Six of eight patients with a positive IDT to the undiluted suspected ICM had a negative test to at least two other undiluted ICM.

Conclusion: In this study we report 30% of ICM HSR fulfilling anaphylaxis criteria, and 70% of these patients had a positive diagnostic work-up. The authors raise the question of whether the IDT should routinely be performed including an undiluted solution, since some potentially allergic patients may be missed otherwise.