No cases of immediate allergy to local anaesthetics over a five-year period in a Danish Allergy Clinic

Ask D. Kvisselgaard; Holger F. Mosbech; Sara Fransson; Lene H. Garvey

Allergy Clinic, Department of Dermatology and Allergy, Herlev and Gentofte Hospital, University of Copenhagen, Denmark

Background

Local Anaesthetics (LA) are widely used in many healthcare settings and exposure during a life-time is almost inevitable. Immediate type allergic reactions to LA are considered rare among allergy experts; but are commonly suspected by other healthcare workers and patients. Earlier studies suggest an incidence of immediate allergy to LA to be in the range of 0-1.12%. The Allergy Clinic at Copenhagen University Hospital, Gentofte, is the Capital Region's only highly specialized allergy department and the majority of suspected drug allergy reactions are investigated here (1.8 million inhabitants). The main aim of this study was to investigate the incidence of immediate type allergy to local anaesthetics in our regional allergy clinic over the 5-year period 2010-2014. A secondary aim was to characterize the symptoms reported in patients with allergic vs. non-allergic reactions.

Methods

In this retrospective single centre study patients undergoing subcutaneous provocation (SCP) for LA were identified by the hospitals clinical coding system and cross-referenced to their medical records. Anamnestic information regarding symptoms, culprit drug, location at time of reaction and treatment were collected when recorded by the doctor. No assumptions or clinical interpretations were made by the authors about information not specifically mentioned. Patients were included if they had been tested with SCP for a suspected immediate reaction to LA. Patients without suspected reactions or with a history of a non-immediate reaction were excluded.

Results

A total of 168 patients (127 women/41 men, median age 56 yrs, range 7-89 yrs) were tested with 195 provocations to LA. The majority (n=131) 78% were tested with culprit LA. For 28 (17%) patients culprit drug was unknown and nine (5%) patients were tested only with alternative LA. Provocations were performed with: lidocaine n=123 (73%), mepivacaine n=25 (15%), articaine n=16 (10%), prilocaine n=15 (9%), bupivacaine n=14 (8%), ropivacaine n=2 (1%). After provocation four patients were excluded, two due to chronic allergy symptoms being present during provocation and two due to symptoms not consistent with allergy. All remaining 164 included patients had negative SCP to all 189 tested LA (95%-CI: 0-1.83%). Another allergen was confirmed in 10% (n=17) of the patients, most commonly antibiotics (n=7) and ASA/NSAIDS (n=5). Since all included patients tested negative on SCP with LA, comparison could not be made between LA allergic vs. LA non-allergic patients. Clinical characteristics where instead compared between patients testing negative and patients testing positive to another allergen. There were no significant differences in age, gender or location at the time of reaction between the groups. Skin symptoms were significantly more common in patients testing positive to another allergen n=16 (94%) vs n=49 (33%) in the test negative group p>0.001. Also, patients testing positive to another allergen had allergy treatment for their reaction significantly more often n=11 (64%) vs n=54 (36%) in the test negative group p=0.014.

Conclusion

All included164 patients with suspected immediate type allergic reactions to LA tested negative on subcutaneous provocation, in most cases with culprit LA. Thus, no patients have been diagnosed with an immediate reaction to LA in our regional allergy clinic in the period 2010-2014. An individual risk evaluation is needed to plan investigations. This study shows that immediate type allergy to LA is very rare regardless of clinical presentation and therefore most patients can be considered to be low risk and can therefore be managed using a single full dose placebo controlled subcutaneous provocation with culprit LA without prior skin testing. Importantly, when allergic skin symptoms are present a reaction to other simultaneous exposures such as antibiotics, latex, NSAIDS and disinfectants is more likely, and should be included in investigations.