

Safety of propofol use in patients allergic to soy or peanut

A retrospective observational cohort study

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Editor,

The use of propofol in patients allergic to egg, soy and peanut is controversial due to the presence of egg lecithin and soy oil in the drug emulsion. In Sweden and in other European countries, allergy to soy or peanuts is a contraindication for propofol. However, British and French guidelines state that propofol is not contraindicated for patients allergic to soy and peanut, nevertheless the British guidelines advice a 'cautious approach'.^{1,2}

Previous studies on propofol safety and food allergy contain a limited number of patients as well as no control group or a confirmatory allergy test.^{3–7} To assess safety of propofol use in patients sensitised to soy and peanut, we performed a retrospective observational study comparing propofol with other intravenous hypnotics. Ethical approval (Reference number 2015/572) was provided by the Ethical Review Board of Lund University on 24 September 2015.

Patients sensitised to soy and peanut were identified by searching two databases of the Department of Immunology, Skåne University Hospital, Sweden. A patient was defined as sensitised if the patient had specific S-IgE level more than 0.35 kU l^{-1} for soy and/or peanut. Sensitised patients were cross-referenced with two surgical management databases, yielding 1109 matches of surgical procedures between 1995 and 2015. A match of a sensitised patient in the surgical management databases was included in the study if the date of the surgical procedure was within 1 year of the date of diagnosis and the anaesthesia contained an intravenous hypnotic. Reported allergies to peanut and/or soy prior to anaesthesia were noted.

All the drugs given during anaesthesia and in the recovery room were recorded. Possible allergic reactions were defined as presence of at least one of the following criteria: a written comment in the anaesthetic chart of a suspected allergic reaction or a comment of a typical allergic symptom (cutaneous, respiratory or cardiovascular manifestations) or the administration of anti-

allergic drugs (epinephrine, theophylline, corticosteroids, antihistamines, inhaled bronchodilators) in the presence of haemodynamic and/or respiratory compromise. The possible allergic reactions were then evaluated by thoroughly scrutinising the medical journal with special emphasis on allergic follow-up and earlier or later anaesthetics. The anaesthetics containing any amount of propofol were pooled in the 'propofol group' and the anaesthetics completely devoid of propofol were pooled in the 'nonpropofol group' (control group). Since the ages within groups were not normally distributed, Wilcoxon signed rank test was used to test for differences in age between groups. Other variables were compared using the χ^2 -squared test.

Median age [IQR] for individuals in the propofol and in the nonpropofol group was 18 [10 to 31] and 13 years [6 to 22], respectively ($P < 0.001$). No difference in sex between the groups was found. The propofol group comprised 518 anaesthetics in 401 individuals. 95% of these individuals were sensitised for peanut, 34% for soy and 29% for both peanut and soy. The nonpropofol group comprised 207 anaesthetics in 175 individuals. 93% of these individuals were sensitised for peanut, 36% for soy and 30% for both peanut and soy. 32 individuals were present both in the propofol and in the nonpropofol group. There were three incidents in the propofol group and two incidents in the nonpropofol group meeting our criteria for a possible allergic reaction. One incident (propofol group) required administration of epinephrine but subsequent follow-up and later uneventful propofol-based anaesthesia did not support drug-allergy as a cause. None of the other four possible allergic reactions was followed up with any testing for allergens. These incidents were judged not to be caused by drug allergy since the organ manifestations were either not treated at all or with common anaesthesiological measures only. The organ manifestations were also either temporally unrelated to a putative drug or more likely explained by a nonallergic untoward effect such as a transient decrease in blood pressure following administration of a hypnotic drug. There were no significant differences in the use of anti-allergic drugs, circulatory support drugs and colloid fluids between the groups.

The main finding of this study of 518 propofol anaesthetics in 401 individuals sensitised to peanut and soy was that there were no incidents of allergic reactions. This is consistent with previous studies investigating propofol in food allergic patients.^{3–7} All studies conclude that propofol is safe to use but the investigated food allergens and patient cohorts differ somewhat between the studies. The relative strengths of the current study are the inclusion of both paediatric and adult patients, the number of patients and anaesthetics, the use of a control group and the defined time interval between diagnosis of

sensitisation and anaesthesia. The use of a control group enabled us to assess surrogate signs of allergy caused instability such as the frequency of administered anti-allergic drugs, circulatory support drugs and colloid fluids. We found no differences between the groups in this regard. All patients in the study were diagnosed with sensitisation within 1 year of the anaesthetic. This minimises the possibility that the patients did not exhibit specific IgE antibodies against peanut and soy at the time of the anaesthesia. There was a higher incidence of reported soy and peanut allergies in the control group suggesting a tendency to avoid propofol when allergy was reported prior to the anaesthesia. Indeed, avoiding propofol in these patients is consistent with manufacturers' recommendations in Sweden. The tendency of avoiding propofol in food allergic patients is also reported in other studies.^{6,7} It is acknowledged that this tendency may have introduced a selection bias in the previous and present studies. The retrospective design of the current study is a limitation. However, given the apparent low incidence of allergic reactions to propofol, also in sensitised patients, it is doubtful whether a prospective study powered to detect differences in outcome measures, ever will be undertaken. In conclusion, this study does not provide any data suggesting that it is unsafe to use propofol in patients sensitised to soy and peanuts. This adds to a slowly growing body of evidence to support the use of propofol in food allergic patients.

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Safety of a powder-free latex allergy protocol in the operating theatre

A prospective, observational cohort study

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Editor,

Latex allergy remains an important patient safety concern in the operating room, as it can cause potentially life threatening reactions.¹ Although prevalence is low, latex allergy cannot currently be cured and early diagnosis and proper management can significantly minimise the risk of a serious reaction. Ideally, a latex-safe environment should be used in all healthcare facilities. Research has shown that the use of powdered gloves caused important contamination in the operating room, in which the powdered latex particles remain airborne for up to 5 h.² The guidelines of the American Society of Anesthesiologists recommend that high-risk patients are scheduled first on the day of surgery to be treated in an operating room left unused for 3 to 6 h.¹ Clearly, this can cause organisational problems, including postponed surgery, increased patient discomfort and additional financial costs. In contrast, the guidelines of the Australasian Society of Clinical Immunology and Allergy (March 2010)³ suggest that this specific scheduling is negligible when all powdered latex gloves are removed from the operating room and replaced by powder-free low-protein latex or synthetic gloves. To date, however, there is limited evidence to confirm the safety of this approach in a clinical setting. Therefore, we investigated if patients with (a high risk for) latex allergy could be treated safely according to the latter guidelines.

On 1 July 2015, a new latex protocol was implemented in our hospital in which all powdered latex gloves and latex containing materials were removed from the operating room, resuscitation cart and operating table and substituted by latex-free materials or covered to avoid skin contact. A prospective observational cohort study was approved by the institutional ethical committee on 29 September 2015 [ethical committee No.: 15.107/anesth15.02, chairperson: Dr K. Magerman; trial registration: Clinicaltrials.gov (NCT02575053)]. Data were collected from patients who were scheduled for surgery and reported (a high risk for) latex allergy. All patients gave informed consent. Prior to surgery, these patients had to fill out a questionnaire which assessed the occurrence of previous latex allergic