

Should we be prescribing isotretinoin to patients with peanut allergies?

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In the UK, two types of isotretinoin are available for prescription: the branded drug Roaccutane[®], made by Roche Pharmaceuticals, and a generic form previously produced by Beacon Pharmaceuticals, but now made by Jensen Pharmaceuticals.

Peanut oil, also known as arachis oil, is the oil extracted from peanuts, and this was previously an excipient in the capsule shell of Roaccutane[®]. In theory, this peanut extract could precipitate an anaphylactic reaction in patients with peanut allergy. In 1997, Hourihane *et al.*¹ reported that allergenic peanut proteins may become denatured during the refining of arachis oil. The arachis oil in the capsules of medications such as Roaccutane[®] is highly refined, and therefore may be less likely to precipitate reactions.

The British Association of Dermatologists (BAD) Guidelines for the use of isotretinoin for the treatment of acne vulgaris states: 'Some brands (of Isotretinoin) contain peanut oil and are contraindicated in patients with peanut allergy.' However, asking about peanut allergy is not mentioned in the pretreatment checklist for isotretinoin treatment.²

In 2008, Laing *et al.*³ identified only three reported cases of isotretinoin-associated anaphylaxis in patients allergic to peanuts since Roaccutane[®] was first licensed in the UK in 1983.

In April 2009, The Medical Information Management System (MIMMS) website posted the following: 'Both the 10 mg and existing 20 mg Roaccutane[®] capsules are now arachis oil free, however, they remain contra-indicated in patients with soya allergy'.⁴ The current Safety Policy and Communications Staff (SPCS) states: 'Isotretinoin is contraindicated in patients with hypersensitivity to isotretinoin

or any of the excipients (the medicine contains hydrogenated soya-bean oil and refined soya-bean oil). It is possible that some patients who are allergic to peanuts may suffer cross reactivity to products containing soya protein'.⁵

In 2008, Walsh and Holmes⁶ published a report of two patients with severe peanut allergy treated successfully with the Beacon Pharmaceuticals generic formulation of isotretinoin, which is free from arachis oil. However, because the drug contains partly hydrogenated vegetable oil, which may contain nut oil and soya extract, there was a theoretical risk of cross-sensitivity to these allergens in patients with peanut anaphylaxis. For this reason, Walsh and Holmes administered the first two doses of isotretinoin in a hospital setting to allow for rapid access to resuscitation equipment if required.

We have successfully used isotretinoin to treat six patients (five male, one female, age range 16–19 years) with known severe anaphylactic peanut allergies. To ensure optimum safety for the patients, considering the current BAD Guidelines, the patients underwent radioallergosorbent tests (RAST) for peanut and soya allergies, and had negative skin prick tests to the isotretinoin capsule and its contents (Fig. 1). The patients were then given their first dose of isotretinoin in the clinic, with access to the resuscitation equipment, and monitored for 1 h. None of the patients experienced an anaphylactic reaction.

Owing to the extremely small, theoretical risk of anaphylaxis to soybean oil in patients with peanut allergy, we propose the following changes to the BAD Isotretinoin Guidelines: (i) removal of the statement from the BAD Guidelines that isotretinoin is contraindicated in those with severe peanut allergy; (ii) addition of a statement that if a patient has a known peanut allergy, a history regarding soybean allergy should also be elicited; (iii) addition of enquiries about peanut and soybean allergy to the pre-treatment checklist.

Instead of sending these patients to immunologists for RAST or skin prick testing, an oral challenge with

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Figure 1 Skin prick test to isotretinoin (I), peanut (P), and soya (S) of a 21-year-old man with a known Brazil nut allergy with oral allergy syndrome, prior to him being commenced on isotretinoin (photo courtesy of Dr A. Bansal). Positive results to soya (soya milk caused oral itching but no systemic symptoms) and peanut are probably a part of the oral allergy syndrome. Note that the skin prick test to isotretinoin was negative. The patient was treated safely with isotretinoin.

a single 20 mg tablet of isotretinoin followed by monitoring for at least 1 h post-ingestion should be performed in the clinic.

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