Allergy treatment may cause new allergy

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Allergic contact dermatitis from aluminium has previously been considered very unusual. However, there are now reports of pruritic nodules and aluminium allergy arising after vaccinations or treatments for allergies. Researcher Eva Netterlid has studied the problem in a thesis recently defended at Lund University in Sweden.

'Pruritic nodules' are small lumps under the skin that cause itching and which, according to some studies, can remain for several years. A study of whooping cough vaccinations in Gothenburg a few years ago showed that almost one per cent of the children developed pruritic nodules in the area of the vaccination. Three out of four of the children who had a reaction with nodules also developed an allergy to aluminium.

"This was completely unexpected. Aluminium has been used as an adjuvant, intensifier, in vaccines for over 70 years with only a small number of reports of pruritic nodules and allergic contact dermatitis", says Eva Netterlid. Her research has been carried out at the Occupational and Environmental Dermatology Unit in Malmö.

There are a number of possible explanations as to why aluminium allergy has become more common.

There is new technology for identifying the allergy, the type of aluminium compounds used in vaccines and other treatments may have changed, and the number of vaccinations has increased with the increase in international travel.

Eva Netterlid only found a very small number of pruritic nodules in a study of diphtheria vaccinations of Swedish 10-year-olds. She then went on to study hyposensitisation, a treatment in which gradually higher doses of an allergenic substance are given to patients who are allergic to pollen, mites, etc. to habituate them to the substance.

This treatment also uses aluminium as an intensifier. The follow-up in this case showed a higher number of reactions. Of 37 children treated, allergic contact dermatitis from aluminium was seen in 8 children and pruritic nodules in 13 children. The 24 children with allergies who were included in the study but who were not given the treatment had neither pruritic nodules nor aluminium allergy.

Another study was of hyposensitisation of children and adults with allergic respiratory diseases. It was found that almost four per cent of the subjects had allergic contact dermatitis from aluminium. There were individuals with aluminium allergy in both the treated and the untreated group, and the allergy could therefore not be conclusively linked to the treatment. However, examination of the patients' arms before and one year after the treatment showed that the number of people with nodules had increased significantly, and the proportion who had pruritic nodules had also increased.

Eva Netterlid and her colleagues hope to be able to continue with their research in the area. One important issue is whether different aluminium compounds produce different outcomes; another is whether those who have had a positive result in the test for aluminium allergy also have clinical symptoms when exposed to drugs and cosmetics containing aluminium.

Provided by Lund University