

**Abstract N°: 2951****Systemic contact dermatitis to formaldehyde released from the Heated tobacco product: a case report**Oleg Nitochko\*<sup>1</sup><sup>1</sup>Odesa National Medical University, Dermatology and Venereology, Odesa, Ukraine**Introduction & Objectives:**

Hand eczema (HE) is a common inflammatory skin disease that can significantly affect a patient's quality of life. The etiology of HE is multifactorial and encompasses genetic and environmental factors (irritants, allergens). For effective management and preventing relapses of HE, along with prescribing appropriate treatment and skin care, it is crucial to avoid clinically relevant allergens.

Systemic contact dermatitis (SCD) is a skin condition in which an individual, sensitized to an allergen via the skin, subsequently reacts to the same allergen or a cross-reacting allergen through systemic routes such as oral, intravenous, intramuscular, inhalational, transmucosal, or transcutaneous exposure.

**Materials & Methods:**

We report on a woman with HE who experienced an exacerbation of eczema after smoking a heated tobacco product, with a polymer-film filter known to be a source of formaldehyde cyanohydrin.

**Results:**

A 33-year-old female dentist with recalcitrant HE presented. The patient was patch-tested with the European baseline series and sensitization to formaldehyde was established. We ruled out all possible sources of formaldehyde in her home and work environment, but could not identify any sources. After thoroughly reviewing her anamnesis, we discovered that she periodically smoked a heated tobacco product known as a possible source of formaldehyde, which is released from the polymer-film filter during heating. Since the patient refused to quit smoking, we proposed that she switch to cigarettes, and her eczema rapidly resolved with appropriate treatment.

**Discussion**

SCD refers to the delayed type hypersensitivity (type IV) reaction that occurs upon re-exposure to an allergen systemically in an individual who has previously been sensitized to it. It is known to occur with exposure to drugs, foods, plants, and herbal products. SCD can present clinically with flares of previous eczema, dyshidrotic hand dermatitis, erythema multiforme, generalized maculopapular-vesicular eruption, vasculitis, urticaria, and even anaphylaxis. Patients may experience systemic symptoms including nausea, vomiting, diarrhea, headaches, malaise, fever and arthralgia. Patch testing helps to confirm sensitization to the suspected allergen. Skin eruptions usually resolve after avoidance of the culprit allergen and prescribing appropriate treatment.

**Conclusion:**

Given that our environment is rapidly changing, it is important to be aware about possible novel sources of known allergens. Even though systemic contact dermatitis is rare disease, it should be considered in the differential diagnosis in cases of recalcitrant to treatment eczema.