

picillin-related rash usually appears 4–10 days after therapy and may often resolve even if therapy is continued.⁷ Our patient's rash developed 24 h after self-medication with ampicillin. To our knowledge, there are no reports in the literature describing jaundice or a hepatic picture with doxycycline. The tetracycline class may produce clinical manifestations of jaundice within 4–10 days after beginning therapy, but it is usually associated with large intravenous doses, pregnancy, and renal disease.²

The patient had a positive serology for hepatitis B core antibody and hepatitis B surface antibody indicating that the patient had hepatitis B in the past but was not manifesting active disease.

We want to alert the practitioner to the possibility of a drug hypersensitivity with hepatotoxicity associated with chlorpropamide. Discontinuance of the drug at the first manifestation of any allergic response such as rash may prevent cholestatic jaundice.

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A Generalized Allergic Reaction due to Zinc in Insulin Preparation

Local cutaneous hypersensitivity reactions due to zinc present in commercially available insulin preparations (zinc insulin, zinc sulfate) have been reported.¹ One of our insulin-

dependent patients, a man aged 61 yr, with diabetes duration of 21 yr and a history of intermittent treatment with various insulin preparations (NPH, lente, semilente MC, Actrapid, Novo, Copenhagen, Denmark) and/or sulfur drugs, developed an immediate generalized cutaneous allergy (urticaria) when changed from Actrapid MC to Monotard (porcine monocomponent insulin). The same generalized reaction was observed after Monotard HM (human semisynthetic monocomponent insulin).

Skin intradermal tests (Novo kit, Novo, Copenhagen, Denmark) were negative to bovine, porcine, and human insulin, but strongly positive to diluting medium for Monotard and to zinc acetate. Serum insulin-specific IgE were below the detection limit (<0.2 U/ml, Falholt²), and insulin IgG were moderately high (4.6 mU/ml, Christiansen³). The patient was completely free from allergic manifestations after switching to Actrapid HM (human semisynthetic monocomponent insulin).

This type of systemic allergy due to zinc has not been previously described and could lead to a wrong diagnosis of allergy to Monotard HM. In fact, U-40 preparations like Actrapid (MC or HM), regular insulin, and Velosulin (Nordisk, Denmark) contain the lowest amount of zinc, i.e., only what is present in the dry insulin crystals (5–8 $\mu\text{g Zn}^{2+}$ /ml). Preparations such as Rapitard MC and NPH also contain the lowest amount of zinc (12–18 $\mu\text{g Zn}^{2+}$ /ml). The lente "family" (Monotard MC and HM, Ultralente MC, Ultratard HM, Semilente MC) contains high amounts of zinc (~85 $\mu\text{g Zn}^{2+}$ /ml): half of the zinc is free zinc and the other half is more or less bound to the insulin crystals and/or amorphous insulin. The diluting medium for Actrapid contains no zinc at all, whereas the diluting medium for monotard contains ~50 $\mu\text{g Zn}^{2+}$ /ml.⁴

Specific insulin IgE determination seems to be a discriminating factor in the diagnosis of insulin allergy.

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