

Efficacy and safety of silver textile in the treatment of atopic dermatitis (AD)

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Background: Patients with atopic dermatitis (AD) have an increased tendency to develop bacterial skin infections. Colonization with *Staphylococcus aureus* is known to be a major trigger and might also play a pathophysiological role. Because of their antiseptic action, silver-coated textiles suppress *S. aureus* colonization and toxin formation, thus damping the inflammatory reaction.

Objectives: To evaluate the clinical effectiveness and safety of a special silver textile in the treatment of patients suffering from acute AD.

Methods: In a randomized phase II monocenter parallel-group comparative study 30 patients were recruited (average age 25.5 years, min. 4 years, max. 70 years) who were affected by AD in an acute phase. During the first study phase from Day 1 to Day 14, 10 patients received a silver textile (Group 1), 10 a silver-free textile (Group 2), and 10 prednicarbate ointment (Group 3). In the second phase from Day 15 to Day 28 all patients wore the silver textile, and during the follow-up period from Day 28 to Day 56 no textiles were used. Prednicarbate ointment was allowed as emergency medication, but ointment consumption was measured. The overall severity of the disease was evaluated using the SCORAD index as the primary efficacy parameter. Secondary parameters included severity of pruritus and the patients' assessment of their disease control (uncontrolled, limited, good or complete). Safety tests included hematology, blood chemistry, urinalysis for silver, and physical examination for silver deposits in the skin and mucous membranes.

Results: The initial SCORAD was 61.6 (IQR 26.6, min. 30.6, max. 99.9). At the end of the Study Phase 1 the SCORAD had improved significantly in the patients of Groups 1 (74.6–29.9, $p = 0.005$) and 3 (57.8–24.0, $p = 0.009$). During Study Phase 2 healing of eczema continued in Group 1 (SCORAD 29.9–18.1, $p = 0.037$), was observed in Group 2 (48.2–24.1, $p = 0.015$), and remained at an improved level in Group 3 (SCORAD 24–23.5). Consumption of prednicarbate ointment (Phase 1, Phase 2, follow-up period, medians are given): Group 1: 135 g, 10 g, 45 g; Group 2: 13 g, 0 g, 0 g; Group 3: 145 g, 30 g, 90 g. Silver textiles reduced the severity of the pruritus ($p = 0.031$); silver-free textiles (n.s.) and prednicarbate (n.s.) were less effective. No undesired events were observed.

Conclusion: The elastic silver textile worn directly against the skin led to an impressive improvement of AD and a reduction in the use of prednicarbate ointment.