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Complete mattress encasing is not superior to partial encasing in the reduction of mite allergen

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Background: Partial mattress encasing was found to be effective in reducing exposure to mite allergen in our previous investigation. We aimed to compare the short-term efficacy of partial and complete mattress encasing and to study mite-allergen levels within these mattresses.

Methods: Thirty-one mattresses with high mite-allergen content were selected and were randomized into one of three study groups (10 for the control group [CG], 11 for the partial encasing group [PE], and 10 for the complete encasing group [CE]). A special mite-impermeable membrane was used. In the PE group, mattresses were encased on tops and sides only, whereas complete mattress encasement was undertaken in the CE group. Regular bedsheets were applied to all groups. Dust samples were collected over bedsheets at baseline and at months 3 and 6, and over mattresses at baseline and at the end of the study. Group I mite allergens in these samples were measured and compared.

Results: At baseline, mattress mite allergens were similar in all groups ($P=0.84$). Mite allergen at the surfaces of bedsheets (over membranes) from both encasing groups were significantly reduced as compared to the CG group ($P=0.003$). Such reduction was maintained throughout the 6-month study. At the end of the study, mite antigens within mattresses in the CG and CE groups were increased as compared to baselines, whereas a decrease was observed in the PE group. Significant difference was observed only between the CG and PE groups ($P=0.006$).

Conclusions: Mattress encasing with a special membrane in this study was highly efficacious in the reduction of mite allergen (>90%). However, with complete encasing, mite allergens within mattresses were increased at the end of the study. Complete mattress encasing in a tropical environment does not offer any advantage over partial encasing.

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