

## Letter To Editor

### Natural rubber latex allergy : Occupational exposure to latex glove among clinical laboratory workers

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Sir,

Occupational exposure to various environmental factors usually produces serious health problems among the employees all over the world. Allergy is an important cause of work related illness. During 1980s and 90s allergy to Natural Rubber Latex(NRL), which contain a complex blend of water soluble plant proteins- has become a major source of concern in clinical science (1). Latex is ubiquitous in medical equipments and devices. Patients and health care professionals are at risk for developing sensitization to latex and possibly serious allergic reactions following exposure to any of these products. The incidence of latex allergy in the health care and scientific personal varies from 17-36% costing a huge economic loss annually to treat (1). The use of latex glove by health care workers has increased, largely due to concern about blood-borne infections. This has been paralleled by a growth of symptoms suggestive of latex allergy (2, 3).

Studies by Irwin B Horwitz et al (4) reported an average latex allergy frequency of 47.7% among health care workers who claimed for compensation. C.H.Katellaris et al (5) used a questionnaire and skin testing to assess the level of latex allergy in a group of dental professionals and proved questionnaire, a reliable test for identifying those with low risk while over estimating those at risk of true latex allergy, demonstrating the need for objective testing with reliable allergens. To date, the prevalence of NRL allergy and its clinical significance has not been well studied among Asian health care workers especially in India. The occupational exposure to latex glove among clinical laboratory workers has been a darker corner of research field so far in India. Clinical laboratory workers are more prone to latex allergy

as they may wear latex gloves for 8-10 hours daily, 5 to 6 days in a week. . In the last few years, latex allergy has been identified as potential medical problem in India. A study conducted by Agarwal et al among the Dental professionals in Udaipur, India, revealed 16% prevalence for allergy to latex gloves (6). The study was conducted among 234 clinical laboratory workers in two major towns (Cochin and Kottayam) in Kerala, India. A detailed questionnaire was distributed personally to the laboratory workers. The Questionnaire Based Latex Hypersensitivity (QBLH) study (5) was followed by haematological studies which included Peripheral Blood Smear (PBS) Examination and Absolute Eosinophil Count (AEC) (7). Both tests were carried out on persons shown QBLH positive.

Those persons who had shown high eosinophil count were subjected to IgE ELISA. Five of them shown high value for Ig E antibody. To conduct the study, Institutional human ethical committee, School Biosciences, Mahatma Gandhi University, Kerala, had given ethical clearance. Out of 234 clinical laboratory workers selected for the study, all responded well to the QBLH questionnaire. Using our criteria to define QBLH, 7 subjects were shown latex hypersensitivity. Those seven subjects were included in further studies like PBS,AEC and IgE ELISA. All shown positive in PBS and AEC. Five of them were present with high value for IgE.

Most epidemiological studies shown 5-7% prevalence to latex allergy in health care workers and 3-8% prevalence in rubber industry workers respectively (8). In a previous study on an Australian Dental population by Kataralis et al (5) 9% prevalence is shown for QBLH. Here 3% prevalence is shown among the clinical laboratory workers. A note worthy finding is that, though the use of latex glove has increased due to outbreaks of AIDS and other blood borne

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diseases, the prevalence rate to latex hypersensitivity is not very high. Manufacturers have produced latex gloves over 100 years and are now aware of the increase in allergic problems due to latex. The relatively low prevalence of latex allergy among laboratory workers in Kerala may be due to lower exposure to the sensitizing antigens. This may be related to the better quality of latex glove traditionally being used in the market.

All the studies so far, used questionnaire surveys, skin prick testing, Patch test, IgE screening etc for the diagnosis of latex allergy. Though this study agrees with the questionnaire surveys previously done, it gave emphasis on using hematological parameters like PBS and AEC to assess the allergic status. Serum IgE screening is a useful tool for assessing latex allergy (9). But comparing with other methods like skin prick test, patch test, the hematological studies are easy to perform. More

over there is no risk of hyper sensitivity reactions developed during test done with blood samples as compared to skin prick test and patch test (9). Studies done by Grunewald J et al revealed the accumulation of eosinophils after exposure to corn starch glove powder (10). Palczynski et al also used eosinophilic response to evaluate latex allergy (11). Our study agrees with both the above studies and revealed increased eosinophilic response in all the QBLH positive cases. There are a number of limitations to the study. Though the persons participated in the study responded well to QBLH, the positive subjects were seem to be afraid of performing skin prick test and patch test as they were aware of hypersensitivity reactions. So we had to stick on to comparatively more easy hematological (blood) findings and IgE screening for the diagnosis. The study was carried out in two cities of Kerala. To get an average population under study, it should be elaborated to other major towns in Kerala.

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