

# LATEX: Bane or Boon in Health Care

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## Abstract

**Background:** By and large Natural Rubber Latex (NRL) allergy is remarked in individuals after exposure to the material. Since NRL is usually found in various materials used in clinical and surgical practices, so NRL allergy can be manifested at day to day basis. The clinical manifestations of latex allergies can range from mild to severe, but it is important to diagnose these allergic reactions and tackle them in a proper way.

**Conclusion:** Severe anaphylactic shocks have been reported because of Natural rubber latex. Chances of wrong diagnosis or mis-diagnosis are more when it comes to latex allergy there by risking the lives of patients. Therefore, precautions must always be taken while carrying out clinical and surgical procedures in order to achieve satisfactory therapeutic approaches and avoiding inflammatory dermatitis and anaphylactic shocks.

**Keywords:** latex Allergy; Allergic Reactions; Anaphylactic Reaction; Inflammatory Dermatitis

## ABOUT THE STUDY

Latex is obtained from rubber trees, *Hevea brasiliensis*, which is used to make various surgical and clinical products which are in day to day use. In health care latex is used ubiquitously which makes up equipments like IV tubings, catheters, balloons and most commonly gloves. Natural rubber latex contain hundreds of allergens, however only 15 are officially documented which are numbered from Hev b1 to Hev b15. Rubber contains allergens which are associated with both asymptomatic and type I IgE-mediated hypersensitivity. In addition to the natural allergens found in latex, a large number of chemical antioxidants are used during latex processing. Latex allergy has been reported as one of the common cause of anaphylaxis during clinical procedures and its prevalence is increasing because of use of latex gloves in order to prevent the spread of transmittable infections which started around 1980s. Chemical antioxidants can also be responsible for the type IV sensitivity. Latex allergy has now become a wide spread problem among health care workers while wearing gloves or inhaling aerosolized particles. Rarely latex allergies can be fatal, as 1% lethality have been reported due to immediate Type I systemic reaction anaphylaxis which can lead to shock and permanent lung injury. A recent study of anti-latex IgE antibodies in blood donors has shown that the prevalence of latex sensitivity may be as high as 6–12% or up to 37 million people in the United States.

Once sensitized, most individuals are asymptomatic and unaware of their antibody status; therefore, clinicians cannot assume that any patient is free of latex allergy. Healthcare workers must be vigilant with latex products since a patient's medical history alone

is inadequate to identify all patients at risk. Points of entry also occur through dermal contact (irritant contact dermatitis) and inhalation (latex glove powder).

List of some of the clinical products that may cause latex allergy

1. Monitoring catheters
2. Urinary catheters
3. Oral and Nasal airways
4. Endotracheal tubes
5. Intravenous tubing
6. Injection ports
7. Bungs/Needle sheaths
8. Gloves, examination/surgical
9. Wound drains
10. Syringes
11. Tourniquets
12. Stethoscopes
13. BP cuffs
14. Enema cuffs

Correctly managing latex allergy is necessary to confirm suitable precaution to be taken for patients who are having latex allergy, which is ubiquitous in the health care settings. For this, latex

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**Received:** March 26, 2021; **Accepted date:** April 09, 2021; **Published date:** April 16, 2021

**Citation:** Jan I (2021) LATEX: Bane or Boon in Health Care. 12: 244.

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allergy committee must be set in every health care institute in order to stop this lethal menace taking lives due to mishandling of such patients.

A 22 year old female with rectal prolapse was admitted in the department of general surgery under the subdivision of colorectal surgery. The patient was planned for surgery for rectal prolapse. On 3rd day of patient admission, which included one day of stay in emergency room (ER), the Dept. of Allergy and Immunology got a call for consultation from general surgery ward, stating that the patient had few episodes of anaphylaxis. After reviewing the patient history and examining the patient, it was revealed that that patient had an episode of generalized rash, shortness of breath, vomiting and hypotension after undergoing physical rectal examination. This episode of anaphylaxis was managed in the ER. Thereafter, on first day in general surgery ward, patient developed generalized rash after receiving intra venous (IV) levofloxacin, which was very well managed in the ward. On day second in ward, patient had two episodes of anaphylaxis, firstly after receiving IV DNS and on the same day after receiving IV ringer lactate. Patient in the past also had features of perennial allergic rhinitis and mild intermittent asthma which she usually ignored. Patient had never experienced any insult of anaphylaxis in the past and was not able to recall

any allergic reaction with the drugs like antibiotics, NSAIDs and PPI's. After evaluating the patient history we requested the general surgery department to defer the surgery for six weeks. At the span of four weeks we examined the patient for drug challenge of levofloxacin and metronidazole with the help of techniques like skin prick test (SPT), Intra dermal test (IDT) and oral challenge test (OCT) which all were negative. After finding these results to be negative, we encountered the main culprit "the latex" with skin prick test which cleared our suspicion after getting a positive wheal size of 26×28mm and specific IgE for latex was 9.6 KUA/L which thus confirmed the allergic reaction to the natural rubber latex.

## CONCLUSION

Allergic reactions due to natural rubber latex during any surgical procedure can be fatal. It is mandatory to rightly diagnose the patients with such types of allergies. A task committee can be formed to compile the list of materials containing latex during surgical procedures, intra venous infusions and physical examinations. A Standardized operating procedure (SOP's) should be established in the operating room in case of perioperative anaphylaxis and should be repeatedly followed in medical practice.