Full Clinical Guideline
Latex Sensitivity in the Operating Theatre

Reference no.: CG-SURGEN/2023/001

1. Introduction

Natural Rubber Latex (NRL) allergy, like peanut allergy, can be life-threatening with symptoms ranging from mild skin reactions to full blown anaphylactic shock. NRL allergy has increased in prevalence over the past 20 years and is now estimated to affect around about 1% of the general population, with increased rates in individuals with frequent exposure to NRL products, e.g. healthcare workers and others using gloves on a regular basis or patients undergoing multiple invasive procedures. Death, although rare, has been reported due to NRL Allergy (Latex Allergy Support Group, 2017).

Two major types of reaction have been reported that are commonly referred to as Natural Rubber Latex (NRL) allergies.

Type IV allergy: delayed hypersensitivity

Type I allergy: immediate hypersensitivity

2. Aim and Purpose

To minimise the possibility of patients, suffering allergic reactions to Natural Rubber Latex (NRL), whilst in the operating theatre.

This procedure should be read in conjunction with Trust Policy:
Health and Safety - UHDB Trust Policy and Procedure

Examples of latex free symbols:

Common signs and symptoms

Irritation- redness, soreness, dryness or cracking of skin exposed to latex. This type of reaction is not an allergic reaction (see below). Once the irritant agent, e.g. latex, has been identified and contact with it ceases, the symptoms will disappear and not recur.

Allergic reaction- Two major types of reaction have been reported that are commonly referred to as Natural Rubber Latex (NRL) allergies.

Type IV allergy- Delayed hypersensitivity – symptoms include dermatitis and itching with oozing, red blisters, which are usually localised to the hands and arms. There occur between 10-24 hours after exposure and can get worse over the next 72 hours. This is an allergic response to the chemical additives.

Type I allergy- Immediate hypersensitivity – symptoms include localised or generalised rash (urticaria or hives); inflammation of the mucous membranes in the nose (rhinitis); red and swollen eyes with discharge (conjunctivitis); and asthma like symptoms. This is an allergic response to the extractible latex proteins and occurs almost immediately on contact. In rare cases it may result in anaphylactic shock.

Three groups of patients exist:

- Group 1- Patients with a history of anaphylaxis to latex or rubber
- Group 2- Patients with a history of allergy to latex or rubber e.g. urticaria, dermatitis, eye swelling, eczema and asthma
- Group 3- High risk group. No previous reaction but have – a) repeat exposure to latex e.g. multiple surgical procedures, repeat catheterisations b) occupational exposure to latex c) atopic patient with one/multiple allergies especially fruit

3. Main body of Guidelines

Procedure is the same for Type I and Type IV allergy.

Resuscitation drugs for the treatment of anaphylaxis should be readily available.

Staff attends Adult Hospital Life Support (HLS) and Paediatric Hospital Life Support (PHLS) mandatory training annually.

All theatre and recovery areas should have access to latex free products.

Many products found in healthcare are labelled ‘latex free’. Nevertheless, healthcare practitioners must familiarise themselves with the products used in their area.

Theatres must be notified in advance of latex allergy/sensitive patients.

Operating lists should alert the latex allergy.

Ensure all staff is aware of how latex protein particles are transferred to minimise the risk.

The Trust has an overarching approach that non-latex non-sterile gloves are purchased for all areas. Theatres do not use powdered gloves.

Note regarding aerosolised latex particles: Non-powdered latex gloves can cause aerosolisation of latex proteins however powdered latex gloves are a more efficient carrier of the protein.

Care should be taken at the WHO Team Briefing to anticipate as far as practical all items/ equipment required for the case

3.1 Transfer of patients to the operating theatre:

Severe confirmed latex allergy patients must be scheduled first on the list, preferably in the morning to reduce the risk of exposure to aerosolised latex protein. If the situation arises where the patient is not scheduled first, due to emergency admission, treat all the patients in a prepared latex free theatre.

Patient transfer trolley must be washed and covered completely with sheeting. Thorough hand washing must be performed prior to cleaning to prevent latex – protein transfer.

Latex free gloves must be worn for cleaning.

Label trolley ‘LATEX – FREE’ and allow it to be used only by the NAMED PATIENT.

3.2 Anaesthetic room care:

A decision should be made early as to whether the anaesthetic room should be used, dependant on the individual patients history. If possible, patients could go directly into theatre.

Door signage must be used to indicate NO ENTRY- anaesthetic room prepared for patient with latex allergy.

Check all equipment is latex free.

Ensure latex free sterile gloves available if necessary.

Some drug vials have rubber stoppers, please avoid as coring in the needle could occur. However, some manufacturers have replaced the rubber with an alternative product e.g. giving sets and I.V. infusion bags.

Some consumables are manufactured with ‘non-sensitising latex’ therefore, they are not latex free.

Use an HME filter at the patient end of the circuit.

Most tourniquets are latex free. If a limb is to be exsanguinated, elevation is recommended. Rhys Davis exsanguinators cannot be used.

Table attachments such as arm boards or heel supports should be latex free. If they are not, appropriate covers must be used to prevent contact with patient’s skin.

Latex and other allergies are stated at anaesthetic Room WHO ‘sign in’ with: Anaesthetist, anaesthetic practitioner and patient

3.3 Preparing the operating theatre:

Ideally theatre preparation should be carried out the evening before.

STAFF SHOULD NOT WEAR LATEX OR RUBBER GLOVES DURING PREPARATION OF THE THEATRE

For 1st patient on an afternoon list: Clean theatre after end of morning list. All team to wash hands and forearms thoroughly and change into clean theatre attire.

Dependent on the number of air changes within the operating room, sufficient time should be allowed to reduce any aerosolised NRL proteins in the atmosphere. Most theatres work with a minimum of 20 air changes an hour and in lamina flow theatres, this can be as high as 500 air changes an hour. Application of basic physics and in the presence of effective maintained air flow systems it is suggested that in the lower air change rooms, the room should be safe to use within a minimum of 30 minutes after the removal of any natural rubber latex and preparatory cleaning and in lamina flow rooms, 15 minutes after the removal and preparatory clean. Risk-assessment of the severity of sensitisation will determine timings.

Staff must wash and adhere to good hand hygiene practices to remove latex particles on the skin and change into clean theatre clothing, if they have been involved in prior cases where latex has been used.

Theatre hats must not be the type containing elastic.

Remove/or cover all latex – containing devices/products from theatre in good time, wipe down all surfaces.

Wipe down all surfaces within the theatre and adjacent rooms to prevent dispersion of latex particles, including operating lights.

Clean the operating table and necessary attachments. Cover with sheeting to prevent contact with latex components.

Substitute latex free medical products for normally used items. Please note that most urinary catheters are manufactured using natural rubber latex. Silicone catheters must be available.

Use latex free hand switching diathermy pencils and remove foot pedals from theatre if possible otherwise cover with plastic bags. Most of the newer foot pedals are latex free so check which type is available.

General awareness is most important as all electrical cables are covered in rubber and removal of all electrical equipment is not possible, gloves must be changed or hand washing performed after contact with these cables.

Particular attention should be given to the possibility of hand transfer of latex proteins.

Door signage must be used to indicate NO ENTRY- theatre prepared for patient with latex allergy.

Remove all non-essential personnel from theatre.

The team must remain in theatre once the case has started, to prevent movement of latex into the prepared theatre. Nominate a ‘clean runner’ who will remain in the prep room to fetch unanticipated items or equipment.

Allergies are part of the WHO STOP moment during operating lists.

Issues for recovery stated at WHO ‘sign out’ to include latex allergy

3.4 Recovery:

Ensure the recovery team are aware of latex allergy patients

A decision should be made early as to whether the recovery room should be used, dependant on the individual patients history. Special arrangements may need to be made.

Curtain signage must be used to indicate NO ENTRY- recovery bay prepared for patient with latex allergy.

Continue to use the same protective measure initiated in theatre.

Anaphylactic reactions to latex occur 20-60 minutes after exposure. Therefore, patients should remain in the recovery area for a minimum of 1 hour.

4. References

AAGBI (2009) GUIDELINES. Suspected Anaphylactic Reactions Associated with Anaesthesia [online] https://www.aagbi.org/sites/default/files/anaphylaxis_2009.pdf

About latex allergies – http://www.hse.gov.uk/healthservices/latex/

Anaphylaxis Campaign Information from the Latex Allergy Support Group [online] https://www.anaphylaxis.org.uk/operating-theatres/

Control of Substances Hazardous to Health Regulations (2002) (COSHH) (HSE)

DHFT Allergy - Paediatric Clinical Guideline. CH CLIN G 112

DHFT Anaphylaxis - Clinical Guideline. CG-T/2014/011

DHFT Anaphylaxis - Paediatric Clinical Guidelines. CH CLIN G113 /Jan 2016/v003

DHFT Hand Hygiene: Trust Policy and Procedure. CL 2015 043

DHFT Latex Allergy - Prevention and Management of Natural Rubber Latex Allergy in Health Care Workers and Others: Trust Policy and Procedure. Extended to 2017

DHFT Reporting of injuries, Diseases and Dangerous Occurrences (RIDDOR) - Trust Policy & Procedure. POL-RKM/2016/043

Health and Safety at Work Act 1974 (HSE)

Latex Allergy Support Group, 2017

Management of a Patient With a Latex Allergy. Christina A. Minami, MD, MS1; Cynthia Barnard, PhD, MBA, MSJS2; Karl Y. Bilimoria, MD, MS1 JAMA Performance Improvement (2017)

Management of Health and Safety at Work Regulations 1999 (HSE)

Personal Protective Equipment (EC Directive) Regulations 1992 (HSE)

Reporting of Injuries, Disease and Dangerous Occurrences Regulations 2013 (RIDDOR) (HSE)

5. Documentation Controls

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