

Latex Allergy amongst Healthcare  
workers at Mankweng Hospital:  
Limpopo

**Maligavhada NJ**

**Polokwane/Mankweng Hospital  
and the University of Limpopo**

# University of Limpopo : Turfloop



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# Introduction

- No conflict of interest declared
- Worldwide epidemic of IgE mediated latex allergy was reported nearly 30 years ago
- It is a common occupational disease amongst healthcare workers using latex gloves
- It affects about 5-17% of these workers
- Caused by repeated exposure to latex protein
- Powdered gloves facilitate inhalation of latex protein

1. Kelly K.J; Latex allergy: Pediatric allergy, Principles and Practice, Second Edition

2. Potter P.C, Foot L; Latex allergy: ALLSA Handbook of Practical Allergy, Third Edition.

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# Latex reaction presentation

- Might present as contact dermatitis
  - Delayed hypersensitivity reaction (Type IV) to accelerators and softeners such as carbamates and thiourams
  - IgE mediated (Type I) reaction which is referred to as latex allergy
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# Study objectives

- As no previous prevalence study had been done and reported in Limpopo, we wanted to fill that gap
  - Main aim of the study was to document latex allergy prevalence at the Mankweng hospital
  - The secondary objective was to document the disease spectrum of affected staff members
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# Study population

- Permission was obtained from our Ethics committee ( PREC)
  - The study was conducted between March and December 2011
  - A cross-sectional descriptive study with an analytical component
  - Healthcare workers in latex 'high-risk' areas were studied
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# Sample size and questionnaire

- A self-administered questionnaire was completed by participants
  - The questionnaire was tested in a pilot study
  - Each participant scored his/her symptoms according to inclusion criteria on the questionnaire
  - 200 questionnaires were distributed with 158 participants responding (79% response rate)
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# Latex allergy confirmatory tests

## 1. Blood test

- We used Lancel Laboratory for blood testing
- Blood was collected for ImmunoCAP testing (Phadia, uppsala,sweden)
- Serum specific IgE to latex and its main allergens (rHev b 1,rHev b5 etc.) was determined
- A value of  $>0.35$  kU/L was regarded as positive

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# Latex allergy confirmatory tests

## 1. Skin prick test

- A skin prick test was done on subjects who tested negative to the blood test
  - A standard latex extract (500mcg/ml protein concentrate) (ALK-Abello) was used
  - Histamine (10mg/ml) was used as a positive control
  - Saline was used as a negative control
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# Latex allergy confirmatory tests

- The testing solutions were introduced on the volar area of the forearm
  - Reading of results was done after 15 minutes
  - A positive test was interpreted as a wheal  $\geq$  3mm of the negative control
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# Results

- Glove related symptoms were present in 59 (37%) participants
  - 12 of these participants refused testing and 2 died
  - ImmunoCAP IgE was positive in 7 participants
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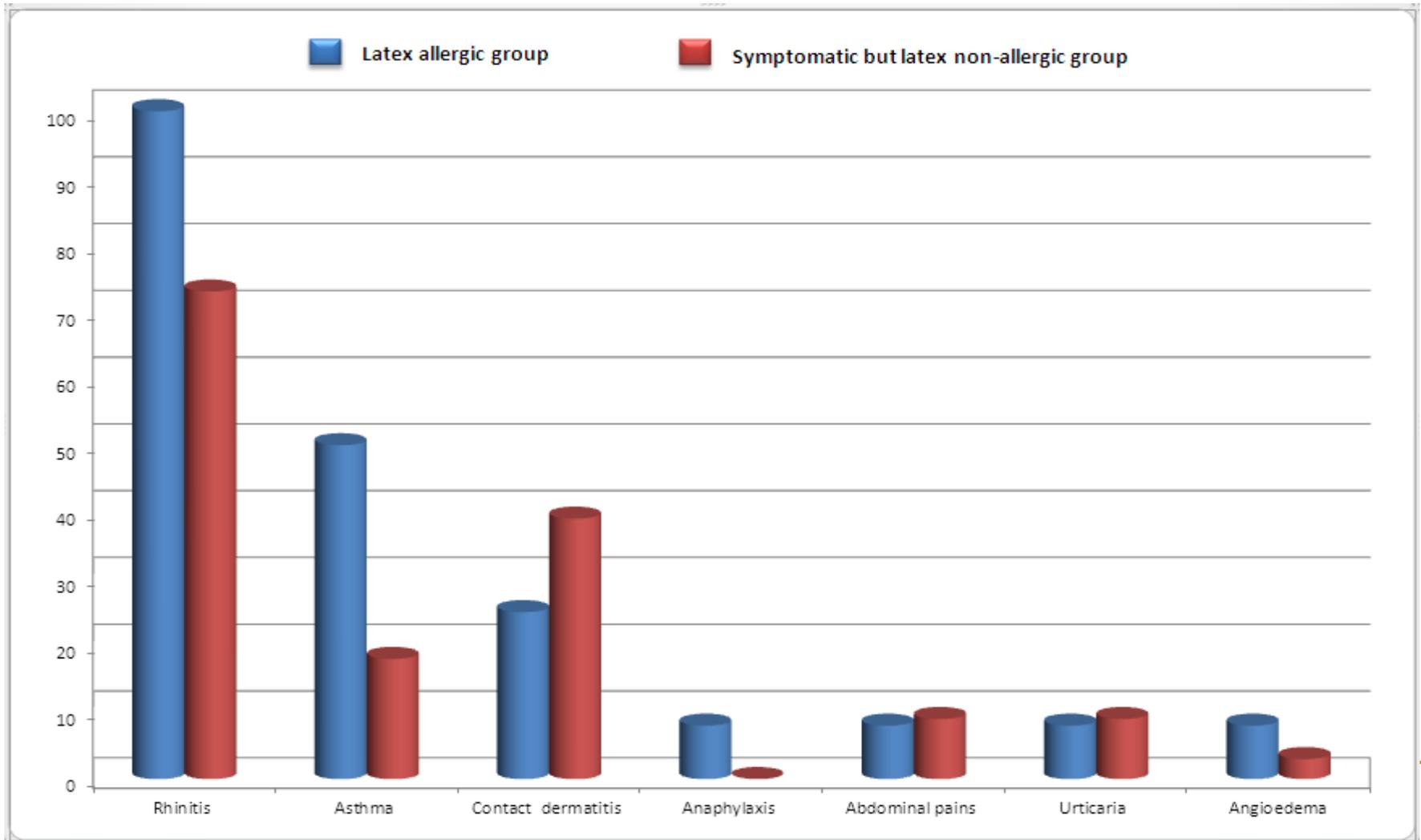
## Results (continued)

- SPT was positive in 5 (13%) of the 38 participants that were negative to the blood test
  
  - The prevalence of latex allergy in the sample was 8.3% (12/144)
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# Clinical symptoms in respondents

Latex Number: 12			Symptomatic but latex allergy test negative Number: 33		
Disease	No	%	Disease	No	%
Rhinitis	12	100	Rhinitis	24	73
Asthma	6	50	Asthma	6	18
Contact dermatitis	3	25	Contact dermatitis	13	39
Anaphylaxis	1	8	Anaphylaxis	0	0
Abdominal pains	1	8	Abdominal pains	3	9
Urticaria	1	8	Urticaria	3	9
Angioedema	1	8	Angioedema	1	3

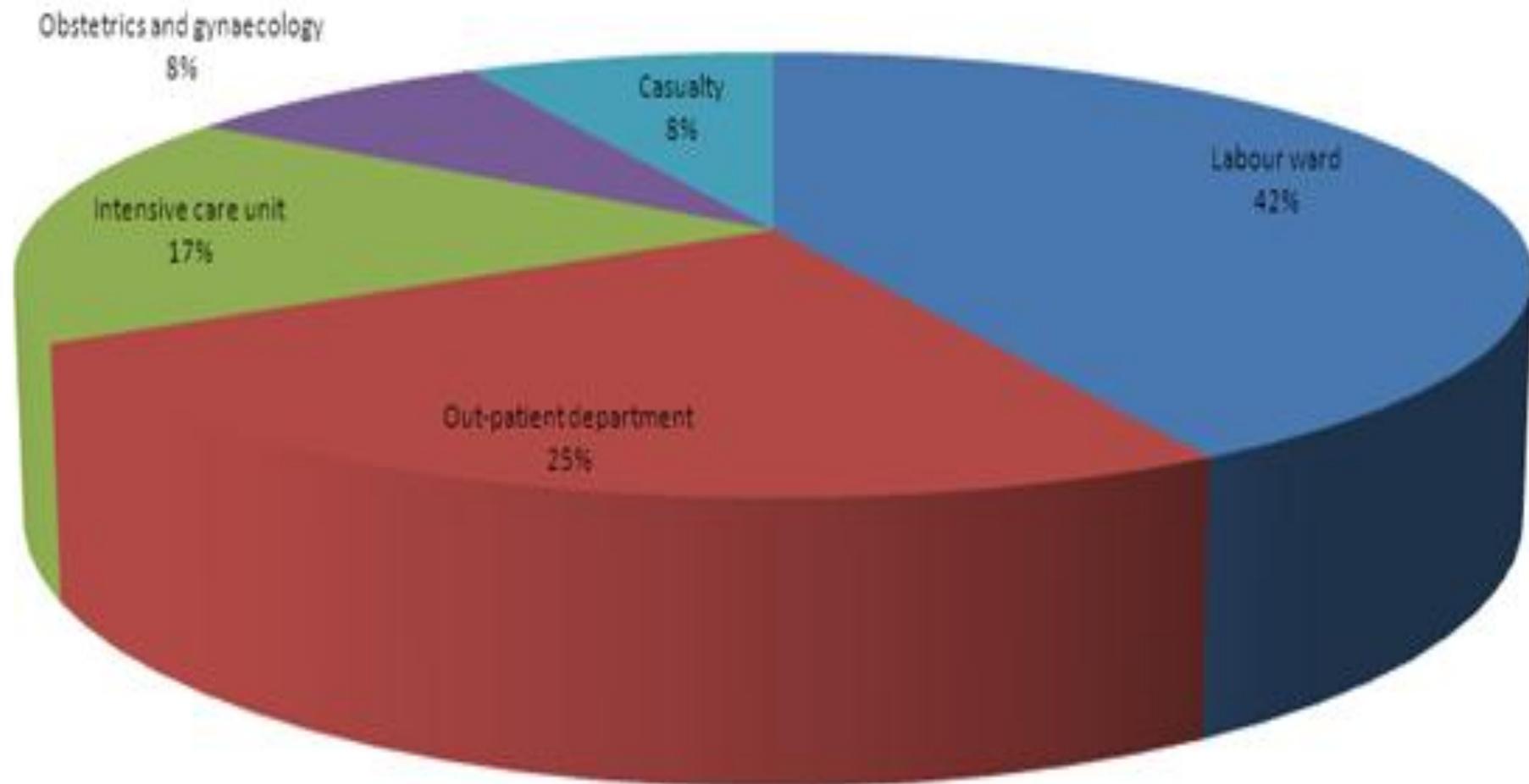
# Diagram 1: Clinical symptoms in respondents



# Latex Allergy and Sensitization according to work station

<b>Workstation</b>	<b>No</b>	<b>% of latex allergic sample</b>
Labour ward	5	42
Out-patient department	3	25
Intensive care unit	2	17
Obstetrics and gynaecology department	1	8
Casualty	1	8
<b>Total</b>	<b>12</b>	<b>100</b>

Diagram 2: Prevalence according to work station



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# Discussion

- The prevalence in this sample of HCW was 8.3%
  - The prevalence is higher than that at Dr George Mukhari of 4.2%
  - The latter study was retrospective with only ImmunoCAP done.
  - No SPT was done in their negative respondents
  - The Limpopo prevalence would have been 4.9% if only blood test was done
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# Discussion

- If no SPT was done in our sample 3.5% would have been missed (5/144)
  - Prevalence studies are variable in other South African teaching centres:
  - Groote Schuur: 9.2%, Red Cross: 5%, Tygerberg 20%, NHLS (JHB): 10.5%
  - The prevalence in Limpopo is thus comparable with other South African centres
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# Discussion

- The commonest presenting symptoms were nasal in both latex allergic and latex allergy test negative participants (100% and 73% respectively)
- Asthma was the second most common in latex allergic participants at 50%
- We suggest that in routine questioning of HCW's for latex allergy, a high index of suspicion be attributed to asthma and allergic rhinitis sufferers

# Conclusion

- Study limitation was that not all departments were studied
- Skin prick testing for latex allergy is superior to blood test in the diagnosis of IgE mediated allergy
- Latex allergy prevalence is significant in healthcare workers in our hospital
- This probably applies to the whole of Limpopo Province
- A latex free environment is needed in certain instances

*THANK YOU*



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-

# ?QUESTIONS?



Questions  
are  
guaranteed in  
life;  
Answers  
aren't.