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IgE-mediated hypersensitivity to chlorhexidine among first-year dental students

- [Sobrina Mohamed Khazin¹](#),
- [Dalia Abdullah^{2,5}](#) ,
- [Amy Kia Cheen Liew²](#),
- [Nor Adilah Harun¹](#),
- [Noormalin Abdullah³](#) &
- [\[...\]](#)
- [Bun San Chong⁴](#)
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Abstract

Purpose

To investigate immunoglobulin E (IgE)-mediated hypersensitivity to chlorhexidine (CHX), and association between CHX exposure and serum specific IgE (SIgE) levels, among first-year dental students.

Methods

Participants completed a questionnaire on medical health, history of allergies/hypersensitivities and CHX exposure. A sample of venous blood (3 mL) was drawn and subjected to SIgE test to CHX; sensitisation defined as SIgE level of ≥ 0.10 kU_A/L.

Results

Fifty-eight (98.3%) participants, consisting of 69% ($n=40$) female with a mean age of 21, were recruited; three quarters (84%) reported no known health issue, and over half had no history of allergies (57%); less than 20% reported having had exposure to CHX-containing products with the majority from toothpaste (9%) and mouthwash (12%). The CHX SIgE test showed that 8.6% ($n=5$) were sensitised. No association between CHX exposure history and the level of SIgE antibody was noted.

Conclusions

Although most participants reported no known exposure to CHX, 8.6% showed CHX sensitisation suggesting unknown exposure and the potential risk of developing hypersensitivity and adverse reactions in the future.

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Abbreviations

ASA:

American Association of Anaesthesiologists

CHX:

Chlorhexidine

FRGS:

Fundamental Research Grant Scheme

HCW:

Healthcare worker

IgE:

Immunoglobulin E

IIUM:

International Islamic University Malaysia

IMR:

Institute of Medical Research

IREC:

IIUM Research Ethics Committee

MHRA:

Medicines and Healthcare Products Regulatory Agency

sIgE:

Serum specific IgE

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Author information

Affiliations

1. Kulliyah of Dentistry, International Islamic University Malaysia, 25200, Bandar Indera Mahkota, Kuantan, Malaysia
 - Sobrina Mohamed Khazin
 - & Nor Adilah Harun
2. Faculty of Dentistry, Universiti Kebangsaan Malaysia, 50300, Jalan Raja Muda Abdul Aziz, Kuala Lumpur, Malaysia
 - Dr. Dalia Abdullah
 - & Amy Kia Cheen Liew
3. Allergy & Immunology Research Centre, Institute for Medical Research, 50588, Jalan Pahang, Kuala Lumpur, Malaysia
 - Noormalin Abdullah
4. Institute of Dentistry, Barts & The London School of Medicine and Dentistry, Queen Mary University of London, E1 2AT, London, UK
 - Bun San Chong
5. Centre for Restorative Dentistry, Faculty of Dentistry, Universiti Kebangsaan Malaysia, Jalan Raja Muda Abdul Aziz, 50300, Kuala Lumpur, Malaysia
 - Dr. Dalia Abdullah

Authors

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Corresponding author

Correspondence to [Dr. Dalia Abdullah](#).

Ethics declarations

Conflict of interest

S.M. Khazin, D. Abdullah, A.K.C. Liew, N.A. Harun, N. Abdullah and B.S. Chong declare that they have no competing interests.

Ethical standards

All procedures performed in studies involving human participants were in accordance with the ethical standards of the International Islamic University Malaysia (IIUM) Research Ethics Committee (IREC no.: 770) and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study.

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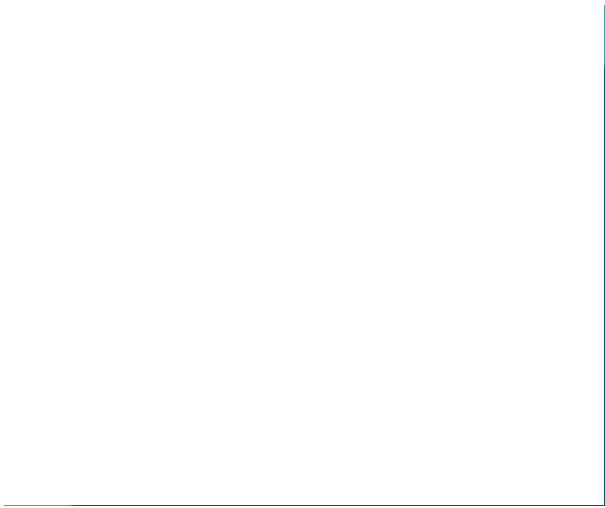
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