

Chlorhexidine (Betasept®) Allergy

Test Name: Chlorhexidine (Betasept®) IgE

Other Names: Chlorhexidine Specific IgE
Chlorhexidine gluconate IgE
Betasept® IgE

Test Code: 140810

CPT Code: 86003

Background:

Anaphylaxis, occurring during the perioperative period is a clinical syndrome involving multiple organ systems, commonly the skin, cardiovascular and respiratory systems. It is a potentially life-threatening condition.^(1,2) The overall incidence of anaphylaxis is estimated to be in the range of 1/5,200 to 1/10,000 per anesthetic procedure¹. Clinical reactions with signs consistent with allergy are subdivided into allergic hypersensitivity reactions, in which a specific immune mechanism can be demonstrated and non-allergic hypersensitivity reactions.

Types of substances Involved

Neuromuscular blocking agents (NMBA)	Latex
Antibiotics	Hypnotics
Local anesthetics	Opioids
Colloids & Proteins	Antiseptics
Dyes	Iodinated Contrast Agents

Chlorhexidine digluconate, a bivalent molecule, is a disinfectant widely used in health care facilities in many countries. Exposure to chlorhexidine is extensive but the evidence of true allergy is not known. In part this derives from the lack of a reliable test method. Most of the severe reactions occur during urologic surgery. In a recently reported Danish study⁽³⁾, the immunological status of a group of patients with suspected allergy was performed by skin testing, basophil histamine release (BHRT) and specific IgE testing. The specific IgE and the skin test were highly correlated. The study confirmed that the allergic reactions to this disinfectant/antiseptic are IgE mediated and that measurement of IgE is useful in patients with suspected chlorhexidine allergy.

Test Method:

Fluoroenzyme Immunoassay (FEIA). IBT has determined the performance characteristics of this test. It has not been approved or cleared by FDA.

Specimen requirement: 1 mL serum

Units reported: kU/L

Reference Range: < 0.35 kU/L

Clinical Utility and Interpretation: A positive test in a patient with a suggestive history confirms the role of IgE in the adverse reaction.

Other Related Tests Available:

Test Code	Test	Method
140110	Protamine	IgE CAP
84010	Latex	IgE CAP
79910	Suxamethonium	IgE CAP
501375	Atracurium	BHRT
501376	Mivacurium	BHRT
501377	Pancuronium	BHRT
501378	Rocuronium	BHRT
46810	Gelatin, Bovine	IgE CAP
35610	Gelatin, Porcine	IgE RAST

BHRT, Basophil histamine release test

References:

- (1) Dewachter, P in Drug Hypersensitivity, edited by Pichler WJ, Basel, Karger, 2007, Perioperative Anaphylaxis, pp 204-215
- (2) Ebo DG et al. Contract allergic dermatitis and life-threatening anaphylaxis to chlorhexidine. *J. Allergy Clin Immunol.* 1998; 101:128-129.
- (3) Garvey LH et al. IgE-mediated allergy to chlorhexidine. *J Allergy Clin Immunol* 2007;120: 409-415.

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