

NEW HORIZONS — ALLERGY —

IgE antibody determinations with ImmunoCAP™ to neuromuscular blocking agents Join us exploring the frontiers of allergy research

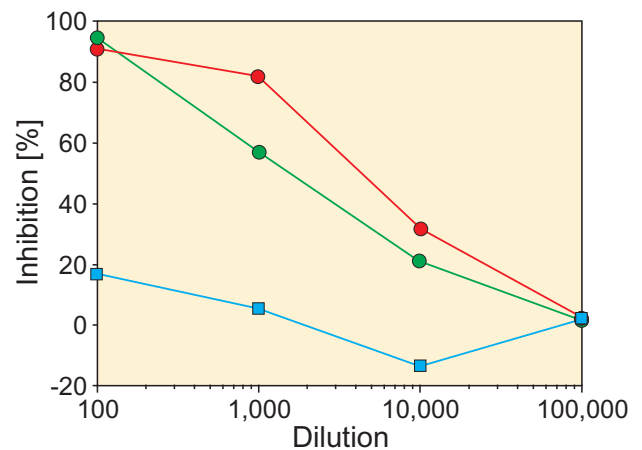
Clinical background

Anaphylaxis during general anaesthesia is a rare but dramatic event that has been increasingly reported during the last decade. Neuromuscular blocking agents (NMBAs) represent the most frequent causes, with suxamethonium (SUX) as the prominent culprit drug. In most cases IgE-mediated mechanisms are involved, but since up to half the patients have not been previously exposed to anaesthetic drugs, other drugs or environmental chemicals sharing the quaternary ammonium ion (QAI) epitope with NMBAs are suspected of initiating IgE-sensitization, i.e. cough syrups containing pholcodine. No gold standard for diagnosis exist, but most protocols include history, immunoassays for serum tryptase and IgE antibodies, and skin and mediator release tests.

To screen for individuals IgE-sensitized the QAI epitope, morphine (MOR) has been recommended. However, a considerable national variation in both frequency of anaphylactic reactions and IgE-sensitization to NMBAs have been observed, probably due to differences in exposure of sensitizing agents. In some populations the presence of IgE antibodies to MOR may have a low specificity for IgE-sensitization to SUX and thus a low predictive value for an allergic reaction upon exposure. A MOR positive serum must be further tested against the NMBA intended to be used to allow a risk assessment.

Reference: New Horizons Number 2, 2005

ImmunoCAP™ inhibition of IgE antibodies to morphine (MOR) and suxamethonium (SUX)



Both MOR (●) and SUX (●) inhibit completely the reaction of a serum positive to SUX, while SUX (■) did not inhibit the positive reaction to MOR. The results indicate that MOR has at least two non-cross-reacting allergenic epitopes, one of which is shared by SUX and most likely is the QAI.

Product List

ImmunoCAP™ for IgE antibody determinations to neuromuscular blocking agents (NMBAs)				
Product	Code	Size	Art. No.	Note
Suxamethonium	c202	10	14-5266-01	
Morphine	-	10	10-9216-50	1
Pholcodine	-	10	10-9216-50	1

Other ImmunoCAP™ of interest for reactions during general anaesthesia				
Product	Code	Size	Art. No.	Note
Thiopental	-	10	10-9216-50	1
Chlorhexidine	-	10	10-9216-50	1
Latex	k82	10	14-4511-01	
Ethylene oxide	k78	10	14-4314-01	
Formaldehyd/Formalin	k80	10	14-4341-01	
Ethylene oxide, Pthalic anhydride, Formaldehyd, Chloramin T	pax6	10	14-4355-01	
Penicilloyl G	c1	16	14-4164-01	

Note 1: For research use only; available through the Drug Allergy Project on one common article number (10-9216-50)

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