

Anesthésie - Divers

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Diagnostic performance of quaternary ammonium specific IgEs to identify allergic perioperative hypersensitivity reactions related to neuromuscular blocking agents.

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Position du problème et objectif(s) de l'étude:

Anaphylaxis, the most severe form of perioperative hypersensitivity (POH) is a core issue in anesthesiology. NMBA is the leading cause of POH in France. Skin tests (ST), currently the gold standard for allergy workups fail to identify the culprit in over a third of POHs. Assessment of quaternary ammonium-specific serum IgE (QA) and basophil activation tests (BAT) could be determinant in such cases. Our objective was to assess QA-specific C260-IgE's diagnostic performance for NMBA-allergic POH.

Matériel et méthodes:

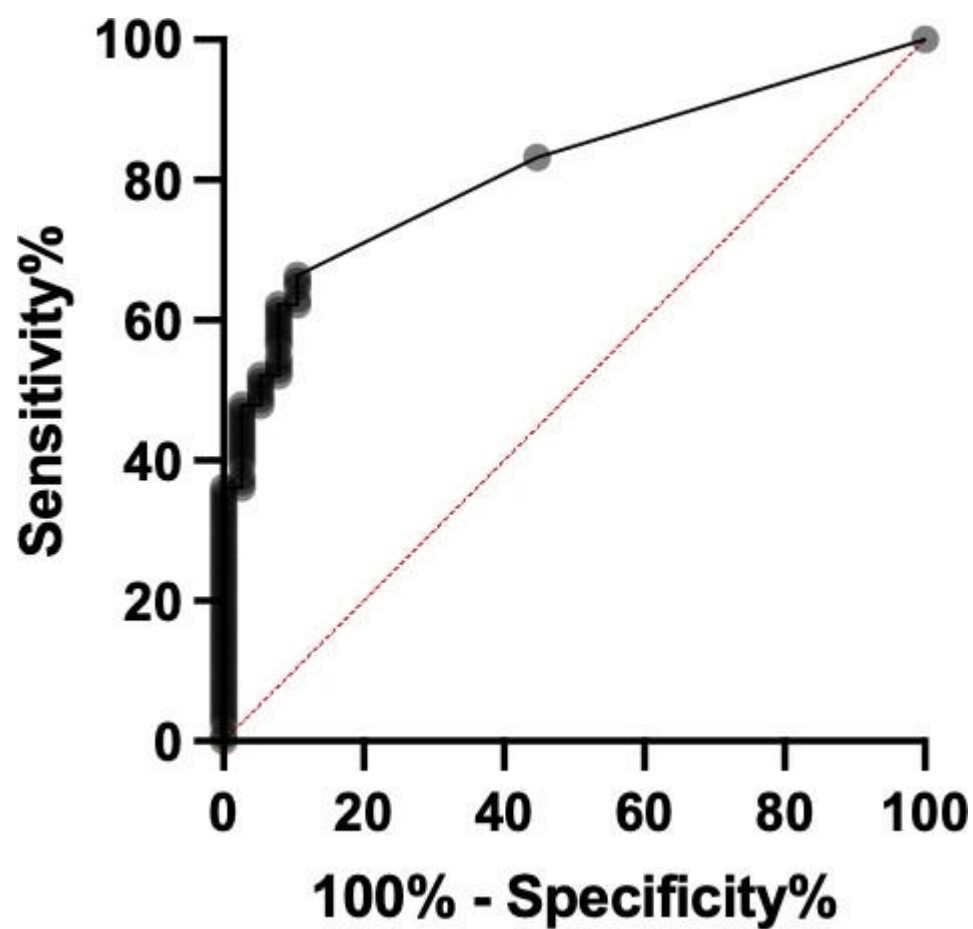
The GERAP (Groupe d'Etudes sur les Réactions Anaphylactiques) is a French national network of allergists and anesthesiologists specialized in POH. Patients with POH occurring between 2017 and 2021 evaluated at a GERAP center were included if they had at least one NMBA ST and one QA-specific IgE evaluation in their allergic workup. C260-IgE levels of patients were compared between patients with a proven allergy to NMBA and patients with a proven allergy to another substance. Then in the subgroup of patients with negative STs to all injected substances, C260-IgE levels were compared between patients with at least one positive NMBA-BAT and patients with all negative NMBA-BATs. Descriptive statistics of quantitative values were summarized as median [interquartile range]. ROC curves were generated using a baseline alpha risk of 5%.

Résultats & Discussion:

Of the 1214 patients with a POH between 2017 and 2021, 479 had available ST results for NMBA and at least one assessment of QA specific IgE. Two hundred seventeen patients were allergic to an NMBA and 63 to another substance. C260-IgE levels were at 0.58 [0.10 – 4.54] and 0.00 [0.00 – 0.10] kUI/L in patients with NMBA and other substance allergy respectively. Area under the ROC curve (AUC) for C260-IgE when comparing these groups was 0.81 (CI95% 0.75-0.88) $p < 0.0001$ (Figure 1). The optimal threshold was 0.12 kUI/L yielding a sensitivity of 66% (CI95% 57-73) and a specificity of 89% (CI95% 76-96). Of the 479 patients, 199 (42%) had negative skin tests to all injected substances. Within this group, 51 had BAT for NMBA of which 20 were positive to at least one NMBA. C260-IgE levels were at 0.49 [0.10–1.11] and 0.00 [0.00–0.14] kUI/L ($p < 0.0001$) in patients with positive and negative BAT respectively. AUC of the ROC curve when comparing these groups was 0.88 (CI95% 0.75-1.00) $p < 0.001$.

Conclusion:

C260-IgE showed good diagnostic performance with high specificity in identifying NMBA-allergic patients. In the subgroup of patients with negative STs, C260-IgE levels were significantly higher among patients with NMBA-positive BAT compared to those with NMBA-negative BAT. Specific IgE assessment and BATs are therefore of particular interest when skin testing is not feasible or when the allergy workup has not yet been performed. If a patient's C260-IgE assessment is positive after a POH, avoidance of all NMBA is mandatory until thorough allergic workup.



Les auteurs déclarent ne pas avoir toute relation financière impliquant l'auteur ou ses proches (salaires, honoraires, soutien financier éducationnel) et susceptible d'affecter l'impartialité de la présentation.