

CONTINUING MEDICAL EDUCATION EXAMINATION

# Anaphylaxis: Mediators, Biomarkers, and Microenvironments

## Instructions for obtaining 1.1 Continuing Medical Education Credits

Credits can be earned by reading the text and completing the CME examinations online throughout the year on the SEAIC web site at [www.seaic.org](http://www.seaic.org)



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## CME Items

- Which of the following is key in anaphylaxis?
  - The need to discover the origin of anaphylaxis
  - The need to find an adequate treatment
  - The need to identify reliable diagnostic, predictive, and prognostic biomarkers
  - The need for a vaccine
- Which of the following triggers are the most frequent elicitors of anaphylaxis?
  - Food, drugs, and Hymenoptera venom
  - Food and drugs
  - Food, NSAIDs, and quinolones
  - Food, chemotherapy agents, and monoclonal antibodies
- Which of the following applies to the diagnosis of anaphylaxis?
  - It is clinical, based on the recognition of signs and symptoms
  - It is clinical, based on the severity of the reaction
  - It is clinical, based on the recognition of signs and symptoms and complemented by the measurement of serum tryptase
  - It is clinical, based on the recognition of signs and symptoms and complemented by the measurement of mediators
- In the allergic sensitization phase, helper T lymphocytes (TH) in the lymph nodes induce the clonal expansion of allergen-specific T<sub>H</sub> cells. To which of the following do TH cells differentiate?
  - T<sub>H</sub>1 phenotype
  - T<sub>H</sub>2 phenotype
  - T<sub>H</sub>17 phenotype
  - T<sub>H</sub>9 phenotype
- IgG-mediated human anaphylaxis leads to the activation and release of mediators. Which of the following is the predominant combination in these types of reactions?
  - Neutrophils and mast cells releasing histamine and PAF
  - Mast cells releasing histamine, PAF, and serum tryptase
  - Mast cells releasing histamine, PAF, serum tryptase, and interleukins.
  - Neutrophils releasing PAF
- Which of these statements is false regarding the pathophysiology of anaphylaxis?
  - Anaphylaxis is an acute and systemic reaction involving several organs and systems
  - Immune system activation is determinant in anaphylaxis
  - The vascular system is not relevant in the homeostatic control of anaphylaxis.
  - The nervous system participates in the regulation of the immune process underlying anaphylaxis.
- Which of these statements is false?
  - Decreased levels of FXII, pKK, and HK have been found in sera from anaphylactic patients
  - Increased levels of C3a, C4a, C5a, and bradykinin have been found in sera from anaphylactic patients
  - Bradykinin is one of the most potent vasoactive mediators involved in anaphylaxis
  - Heparin exhibits a key function in the activation of the coagulation system after mast cell and basophil degranulation.
- Which of the following highlights the relevance of using anti-IL-4R $\alpha$  in therapy?
  - It blocks actions mediated by IL-4 and IL-13
  - It blocks actions mediated by IL-4
  - It blocks actions mediated by IL-4 and IL-14
  - It blocks actions mediated by IL-13 and IL-33
- Which of the following mediators is released by the nervous cell system to resolve anaphylaxis?
  - Serotonin, substance P, and calcitonin gene-related peptide
  - Substance P, calcitonin gene-related peptide, and adenosine
  - Epinephrine and norepinephrine
  - Epinephrine, norepinephrine, and angiotensin II
- Which of these statements is false?
  - In human anaphylactic serum samples, the analysis of miRNA levels demonstrated variations in miR-21-3p, miR-487b-3p, and miR-451a
  - miR-21-3p participate in MC degranulation through Rac signaling
  - In murine models and human anaphylactic serum samples, the analysis of miRNA levels demonstrated variations in miR-21-3p, miR-487b-3p, miR-451a, miR-155, and miR-154-5p
  - Extracellular vesicles obtained during anaphylaxis induce an increase in endothelial permeability in vitro