Test yourself in mast cell (MC) and atopy

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Choose only one answer:

1. **What is true about mast cell location?**
   a) Usually intravascular
   b) Abundant in bone marrow
   c) Increased density in exposed skin
   d) Rare in the GIT
   e) All of the above

2. **Mast cell activation occurs through:**
   a) Direct binding of pathogens or their components by pathogen associated molecular pattern (PAMP) receptors located on the MC surface
   b) Binding of opsonized bacteria or their products by complement receptors or immunoglobulin receptors
   c) Recognition of endogenous peptides produced by infected or injured host cells
   d) All of the above
   e) None of the above

3. **Mark the incorrect answer:**
   a) Allergen sensitization is a primary immune response that involves the binding of specific IgE to MC
   b) Endotoxins can act on MCs via TLRs inducing the secretion of TNF-alpha
   c) Sensitized MCs may amplify the allergic response by acting as antigen presenting cells to further drive allergen specific Th2 proliferation
   d) Preformed MC cytoplasmic granule-associated mediators include heparin, tryptase, TNFα, and leukotrienes

4. **Chemokines produced by mast cells include all except**
   a) Eotaxin
   b) RANTES
   c) Prostaglandins
   d) IL-8
   e) MCP-1

5. **In the allergic reaction:**
   a) IL-5 inhibits eosinophil mobilization from the bone marrow
   b) IL4 up-regulates FceR1 and allows eosinophil recruitment
   c) RANTES recruits monocytes-macrophage lineage cells
   d) MPC-1 induces histamine release from basophils

6. **The Th2 cell- mast cell- eosinophil axis means:**
   a) Stem cell factor produced from eosinophils allows MC activation.
   b) MCs regulate stem cell factor release.
   c) Th2 cytokine- stimulated MCs express inflammatory mediators that can activate eosinophils
   d) All of the above

7. **Mark the incorrect statement:**
   a) MCs may contribute to a model of Th17 cell-dependent neutrophils-associated lung inflammation
   b) LTB4 produced on MC activation induces airway inflammation by recruiting effector CD8 and CD4 T cells
   c) Toll-like receptors (TLRs) on MCs play an important role in allergy exacerbation.
   d) Staph. aureus enterotoxin B shifts the cytokine pattern toward Th1 which activates the mast cells
8. Mast cells may contribute to tissue remodeling as follows:
   a) Increase mucus-producing goblet cells in the airway epithelium
   b) Increase collagen deposition and bronchial smooth muscle
   c) Produce growth factors and angiogenic factors that induce skin thickening and fibrosis in atopic dermatitis
   d) All of the above
   e) None of the above

9. Mark the correct answer
   a) Within the heart, mast cells are located on the pericardium
   b) Activation of cardiac mast cells may prevent cardiopulmonary failure.
   c) Cardiac mast cells release many of the classic mast cell mediators of anaphylaxis except PAF
   d) PAF is thought to be a critical factor in the development of anaphylactic shock through its ability to induce hypotension
   e) Individuals with recurrent anaphylaxis tend to have less dermal mast cells than those without anaphylaxis

10. Mast cell directed treatment modalities may include all except:
    a) Corticosteroids
    b) Tryptase enzyme
    c) IL4 and IL13 inhibitors
    d) TNFα blockade
    e) Anti-CD63 monoclonal antibodies

(Answers on page 104)