## Therapies that were used in past

### Mycophenolate mofetil / mycophenolic acid

Mycophenolate mofetil (MMF), a prodrug of mycophenolic acid (MPA), inhibits inosine-5'-monophosphate dehydrogenase, depleting guanosine nucleotides in B and T lymphocytes and inhibiting their proliferation. It was used off-label in patients with refractory or intolerant AE. There are no high-quality randomized controlled trials to support its use.[1]

### Omalizumab

Omalizumab, an anti-IgE antibody, binds free IgE and prevents its interaction with high-affinity receptors on mast cells, basophils, and epidermal dendritic cells, potentially reducing inflammation in AE. While it is approved for example for asthma and chronic spontaneous urticaria (CSU), its use in AE remains off-label. Despite some observational studies and a clinical trial[2] showing moderate efficacy in improving AE symptoms, the evidence is conflicting, with no predictive markers for a better response.[3] Omalizumab's safety profile is excellent, but its unpredictable and modest efficacy does not support its widespread use for AE treatment.

### Immunoadsorption

Immunoadsorption has been used in patients with AE and elevated total IgE levels based on the assumption that a reduction in IgE might result in disease improvement.[4] Immunoadsorption was reviewed in the previous AE guidelines, but is expected to be scarcely used in the future, as multiple newer effective and safe treatments are available.

### Mast cell stabilizers

Mast cell stabilizers block mast cell degranulation preventing the release of histamine and related mediators. Mast cell stabilizers were reviewed in the previous AE guidelines, but they are expected to be scarcely used in the future, as multiple newer effective and safe treatments are available.

### Intravenous immunoglobulin

Intravenous immunoglobulin (IVIG) provides immunomodulatory therapy in inflammatory and autoimmune diseases.[5] IVIG was reviewed in the previous AE guidelines, but is expected to be scarcely used in the future, as multiple newer effective and safe treatments are available.

### Leukotriene antagonists

Montelukast is a cysteinyl leukotriene receptor antagonist that blocks the action of LTD4, LTC4 and LTE4.[6] Montelukast was reviewed in the previous AE guidelines but is scarcely used, as multiple newer effective and safe treatments are available.

### Apremilast

Apremilast is a small molecule phosphodiesterase (PDE) 4 inhibitor that has been approved for the treatment of psoriasis arthritis and moderate-to-severe plaques psoriasis. Apremilast was reviewed in the previous AE guidelines but is expected to be scarcely used in the future, as multiple newer effective and safe treatments are available. The apremilast clinical program in the treatment of AE has been discontinued.[7-10]

**References**

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