Adult EoE: Lessons Learned from Investigator-Initiated Trials

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1. 1 mg twice daily for 15 days.
2. First placebo-controlled corticosteroid study in adult EoE (n=36).
3. More than 90% reduction of mean esophageal eosinophilia in the esophageal epithelium.
4. White exudates and red furrows were reversed (based on endoscopy examination).
5. Significant improvement of dysphagia.

Straumann A et al. Gastroenterology 2010;139:1526-1537
1. 0.25 mg twice daily for 50 weeks in quiescent EoE in remission.
2. Placebo-controlled corticosteroid study in adult EoE (n=28).
3. Mean esophageal eosinophilia significantly increased in the esophageal epithelium, but less than in placebo group. 50% were kept in at least partial remission.
4. Other inflammation markers, immunopathology and remodeling behaved in a similar manner.
5. No epithelial atrophy; remodeling showed trend toward normalization.

Infliximab in adult EoE

1. 2 infusions, 5 mg/kg, at week 0 and 2 twice.
2. Open-label, nonrandomized pilot trial (n=3).
3. No evidence for reduction of mean esophageal eosinophilia in the *esophageal epithelium*.
4. **TNF-α** reduction in the epithelium was achieved, at least partially.
5. No clinical improvement, but well tolerated.

Targeting IL-5 in adult EoE (1)

1. Four single injections of anti-IL-5, 750 mg and 1500 mg.
2. First placebo-controlled study in EoE (n=11).
3. 50% reduction of mean esophageal eosinophilia in the esophageal epithelium.
4. Eosinophil numbers in the duodenum are not affected.
5. No remission, no significant clinical response.

6. Reduction of eosinophils is associated with significant reduced molecular remodeling (TGF-beta, tenascin C).

7. TNF-alpha and eotaxin-3 expression levels in the esophageal epithelium are not affected by mepolizumab.

8. Eotaxin levels in blood are increased upon mepolizumab treatment (risk of rebound-effect?).

1. 100 mg OC000459 twice daily for 8 weeks in active EoE.
2. Placebo-controlled, double-blind study in adult EoE (n=26).
3. Mean esophageal eosinophilia significantly decreased in the esophageal epithelium. CRTH2 expression was not affected.
4. Disease activity and remodeling events were reduced after therapy.
5. No serious adverse events were observed.

Immunopathogenesis of EoE: Treatment options

Straumann A et al. Allergy 2012;67:477-490