



Università degli Studi di Torino

Scuola di specializzazione in Pediatria

Tesi di Specializzazione

**To eosinophils and beyond:
clinical, endoscopic and histological
characteristics of immune-mediated
esophagitis in a pediatric cohort.**

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Abstract

To eosinophils and beyond: clinical, endoscopic and histological characteristics of immune-mediated esophagitis in a pediatric cohort.

Background and Aims: Eosinophilic esophagitis (EoE) is a chronic, immune-mediated disorder which impacts the esophageal function. It is attributed to the activation of a Th2 inflammatory response, triggered by exposure to antigens from food or the environment. Prevalence of EoE raised in the last two decades, due to the increasing awareness among pediatricians. Other immune-mediated esophageal disorders have been recently described, such as lymphocytic esophagitis (LyE) and compound lymphocytic–eosinophilic esophagitis (CoLy-EoE), although the clinical significance of these conditions remains poorly understood. The aim of this study is to report the prevalence, the clinical, endoscopic and histological findings of these two entities and to compare them with those of a cohort of children affected by EoE.

Methods: We enrolled all the children (age < 18 years) which performed esophageal biopsies from January 2018 to September 2024 at XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX, Italy. All the biopsies were obtained from ≥ 3 levels of the esophagus. Samples were colored with hematoxylin and eosin and stained with monoclonal antibody anti-CD3 (2GV6), anti-CD4 (SP35) and anti-CD8 (SP57) using BenchMark ULTRA System. We included children with a final diagnosis of EoE (≥ 15 eosinophils/HPF), LyE (≥ 40 CD3+ lymphocytes/HPF) or CoLy-EoE (combination of previous). Patient demographics, clinical, endoscopic and histological characteristics, therapy and follow-up data were analyzed.

Results: We included 80 patients, of which 78% (n=62) were males. At index biopsy, 44% (n=35) were diagnosed with EoE, 31% (n=25) with LyE and 25% (n=20) with CoLyE-EoE. The three group presented a similar clinical presentation. LyE have mostly a normal endoscopic appearance compared to EoE and CoLy-EoE (p-value <0.001). In the EoE group, 89% (n=31) of children had an atopic history (p-value <0.001) and 63% (n=22) had a confirmed food allergy versus 12% (n=3) of LyE and 25% (n=5) of CoLyE-EoE. Esophageal atresia was reported in 15 patients (20%), of which 10 had Lye (p-value 0.006). Considering the depth of lymphocytic infiltration, we can observe a trend of deeper infiltration in CoLy-EoE rather than LyE (p-value 0.08) and it usually correlated with a worse clinical presentation (p-value 0.003).

Conclusions: Whether LyE is an isolated disease or part of the EoE spectrum remains to be defined by large-scale studies. CoLy-EoE suggests a synergic activity of several immune actors in the etiology of EoE. For this reason, CD3, CD4 and CD8 staining should be performed in all children performing a gastroscopy due to esophageal symptoms.