

Granzyme B is elevated in esophageal biopsies in Pediatric Eosinophilic Esophagitis

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Abstract

BACKGROUND: Eosinophilic esophagitis (EoE) is an immune-mediated antigen-triggered inflammatory disease of the esophagus. Our aim was to investigate inflammatory responses by a new *ex vivo* biopsy provocation-based method, stimulating biopsies with food extracts, possible antigens. **METHODS:** An experimental study was conducted on esophageal biopsies from children who underwent esophagogastroduodenoscopy. Supernatants were collected before and after stimulation of the biopsies with food extracts and analyzed for inflammatory markers, as was also blood and saliva. The biopsies were also stained for histological analyzes. **RESULTS:** Twenty-six patients, median age of 12 years, were included. Of the 45 markers analyzed, three had significant differences between controls and patients with active EoE, Granzyme B, (GzmB), IL-1ra and CXCL8 ($p < 0.05$). Levels of GzmB were higher, and levels of IL-1ra were lower in EoE active patients compared to controls and EoE in remission both at baseline and after food extract stimulation. CXCL8 increased in active EoE compared to controls after stimulation. GzmB-positive cells were histologically demonstrated in biopsies from patients with active EoE in contrast to control and EoE remission. **CONCLUSIONS:** The levels of the barrier-damaging protease GzmB were increased in the supernatant both before and after stimulation with food extract *ex vivo* in patients with active EoE, using a new method and observed histologically in biopsies from patients with active EoE. The presence of the barrier damaging GzmB in EoE active patients may be a guide for future studies in the pathology of EoE.

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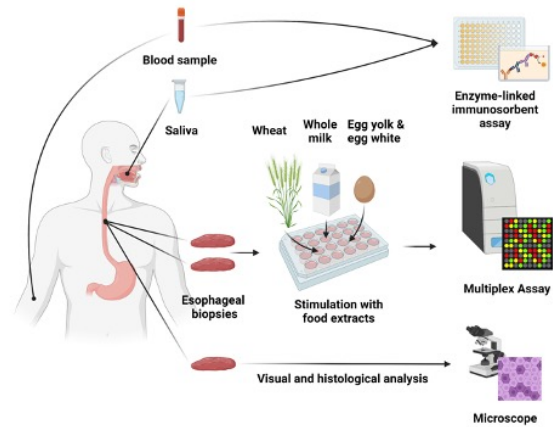
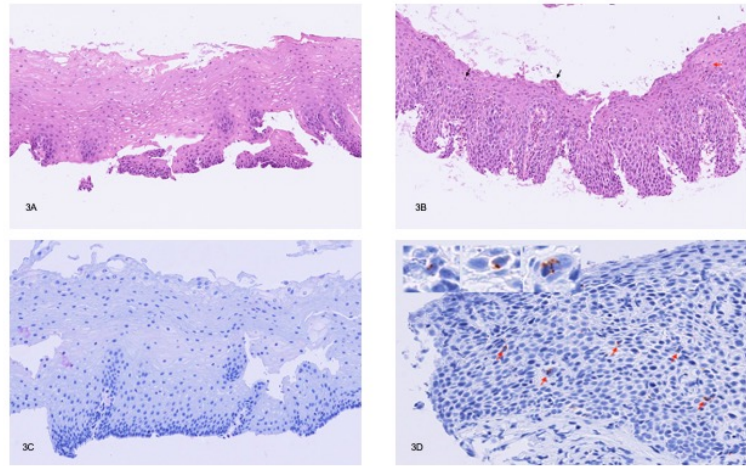
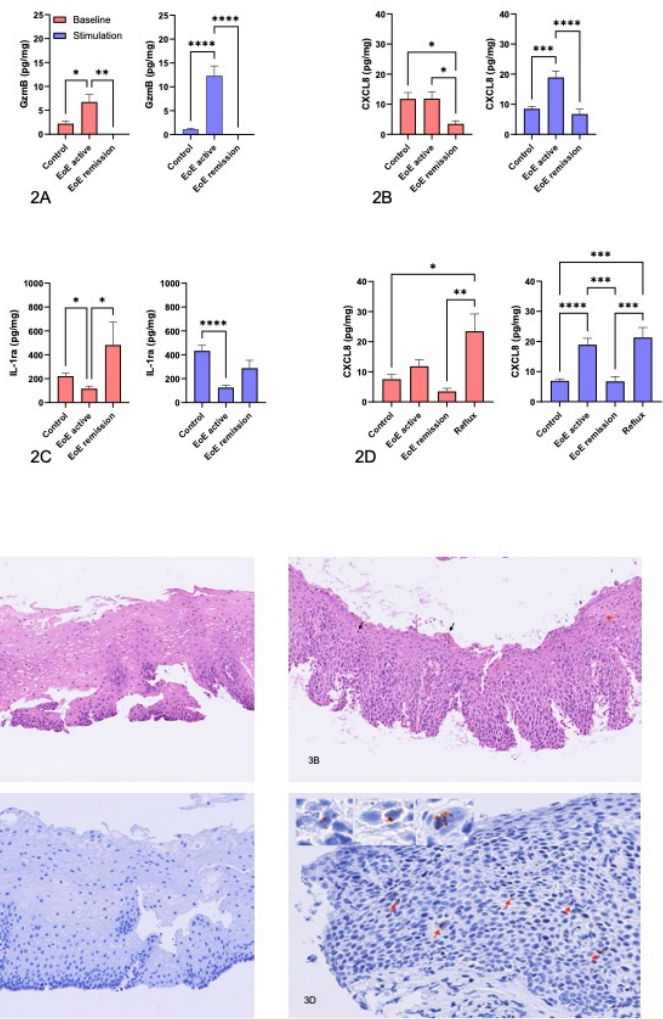


Figure 1. Patient samples, esophageal biopsies for stimulation and histology, blood and saliva and methods.



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