Case Study:

NAVIGATING COMPLEX ENDPOINTS IN A GLOBAL EOSINOPHILIC ESOPHAGITIS (EOE) CLINICAL TRIAL



BACKGROUND

Eosinophilic esophagitis (EoE) is a chronic, immune-mediated disease characterized by esophageal inflammation and symptoms such as dysphagia, food impaction, and chest or abdominal discomfort. Clinical trials in EoE are operationally complex because efficacy depends on both objective histologic response and patient-reported symptom improvement. This requires disciplined endpoint protection, consistent biopsy collection and workflows, reliable patient-reported outcome assessment, and close cross-functional oversight. These requirements create unique operational risks that can directly influence endpoint interpretation and overall study success.

This case study summarizes Medpace's experience and the strategies used to support the successful execution of a global Phase II clinical trial evaluating multiple doses of an investigational therapy in patients with EoE, with a particular focus on protecting complex patient-reported and histologic endpoints.

STUDY OVERVIEW

The study required coordination of complex histologic and patient-reported endpoints across a geographically diverse site network while maintaining high-quality endpoint collection and eligibility confirmation. The study required simultaneous protection of both histologic and patient-reported co-primary endpoints across a geographically diverse site network, creating unique operational and data-quality challenges.

MULTICENTER
GLOBAL PHASE II

180+
PATIENTS ENROLLED

70+
SITES ACTIVATED

8
COUNTRIES

STUDY CHALLENGES AND ISSUES OBSERVED

Complex Patient-Reported Endpoint:

The Dysphagia Symptom Questionnaire (DSQ) represented a particularly important and challenging endpoint. Accurate assessment required more than simply ensuring ePRO completion. Patients may normalize or adapt to dysphagia-related symptoms through changes in eating behavior, potentially leading to underreporting. Investigators therefore needed to carefully assess dysphagia during screening, including behaviors that may indicate adaptation to swallowing difficulties, such as prolonged mealtimes, increased chewing, avoidance of bulky or textured foods, and use of liquids to facilitate swallowing. Patients also needed education on recognizing and consistently reporting these behaviors throughout the study. Consistent DSQ assessment was critical to protecting the integrity of this endpoint.

Patchy Nature of EoE:

EoE can present with patchy disease throughout the esophagus, meaning historical biopsies may not always capture evidence of disease despite a compelling clinical history. Consistent biopsy collection methods and workflows were therefore important for establishing disease eligibility and evaluating treatment response.

Specialized Site Requirements:

Successful execution required sites with experience managing EoE patients, understanding the nuances of disease assessment, and consistently capturing complex clinical and patient-reported endpoints.

Screen Failure Risk:

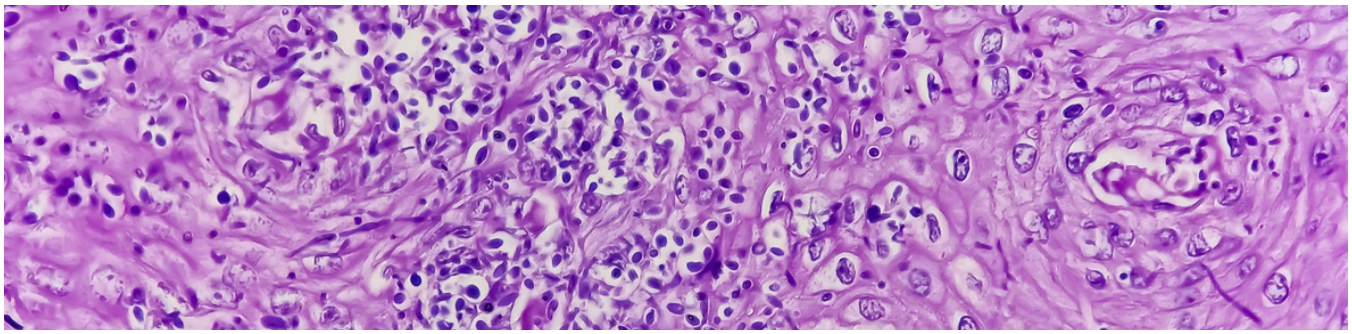
Screening required close monitoring of key failure drivers, including biopsy-confirmed EoE eligibility, exclusion of other gastrointestinal disease, and DSQ-related symptom criteria. Early identification of these factors helped sites focus screening efforts on patients most likely to meet protocol requirements.

Central Reader and Data Flow Complexity:

Central pathology assessment introduced additional operational complexity, requiring clear processes for source documentation, specimen handling and tracking, reader workflows, data transfer, reconciliation, and resolution of discrepancies. Maintaining clear ownership and coordination across these processes was critical to ensure that pathology assessments remained timely, traceable, and available for endpoint evaluation.

Central Pathology Controls and Biopsy Management:

Medpace Core Laboratories (MCL) brings established expertise in esophageal biopsy management, supporting centralized specimen logistics, pathology coordination, specimen traceability, and histologic endpoint assessment. This integrated approach helps ensure consistency from biopsy collection through central review while reducing operational complexity for study sites and Sponsors.



MEDPACE SOLUTIONS AND MITIGATIONS

Focused Endpoint Protection: Medpace placed particular emphasis on electronic patient-reported outcome (ePRO) compliance and the DSQ endpoint. Close monitoring and communication with sites helped reinforce the importance of timely, complete patient-reported assessments and minimize missing data that could compromise endpoint analysis.

Experienced Site Selection: Medpace leveraged established relationships with high-performing, experienced sites to identify investigators with proven capabilities in EoE research. This established site network supported efficient study startup, patient recruitment, and high-quality data capture. This approach also reinforced protocol adherence and supported more consistent collection of key efficacy endpoints.

Flexible Screening Approach: For patients with a compelling clinical history but without adequate historical biopsy confirmation, the study allowed for a screening biopsy following Medical Monitor review and confirmation of the patient's clinical history. This approach provided an additional pathway for appropriate patients to enter screening while maintaining disease confirmation requirements and reduced the risk of excluding otherwise appropriate patients.

Central Pathology Controls: Medpace established structured central reader processes, including source documentation, clear ownership of data flow, and reconciliation tracking. These controls reduced the risk of reconciliation delays, improved traceability, and supported reliable availability of pathology data for endpoint analysis.

Close Medical and Operational Collaboration: Medpace's GI and EoE-experienced medical and operational teams worked closely with investigators throughout study execution to address disease-specific questions, reinforce protocol requirements, support dysphagia assessment, and ensure consistent interpretation of protocol-defined endpoints.

EoE-Specific Execution Strategy: EoE trials require a specialized strategy rather than a standard GI trial approach. Medpace's execution model incorporated disease-specific considerations across histology, endoscopy logistics, DSQ/ePRO compliance, and central reader oversight.

RESULTS AND PERFORMANCE HIGHLIGHTS



Strong Enrollment Delivery: The study achieved robust enrollment in a competitive EoE environment, supported by established site relationships and strong performance from selected high-enrolling sites.



Successful Co-Primary Endpoint Execution: The study supported collection of both histologic and patient-reported co-primary endpoints, requiring coordinated oversight of biopsy workflows, pathology assessment, and DSQ completion throughout study execution.



Endpoint Protection Strategy: Proactive oversight of pathology workflows, site training, and DSQ management helped reduce operational risks associated with complex co-primary endpoints.



Safety and Tolerability Evaluated: Safety and tolerability were assessed alongside efficacy endpoints, including evaluation of treatment effects on eosinophil counts.

LESSONS LEARNED

Endpoint Protection Requires More Than ePRO Compliance: Successful execution of EoE studies requires active investigator engagement and patient education. Accurate DSQ assessment depends not only on timely questionnaire completion but also on helping patients recognize adaptive behaviors associated with dysphagia and consistently report symptom changes throughout the study.

Screening Complexity Must Be Anticipated Early: Eligibility confirmation in EoE extends beyond historical diagnosis and often requires careful review of biopsy findings, symptom criteria, and exclusionary gastrointestinal conditions. Early identification of common screen failure drivers allows proactive site coaching and more efficient recruitment efforts.

Histologic Endpoints Require Well-Defined Operational Workflows: Biopsy collection, pathology review, specimen tracking, data reconciliation, and endpoint reporting require clear ownership and standardized processes. Early planning and governance reduce operational complexity and support timely availability of histologic data.

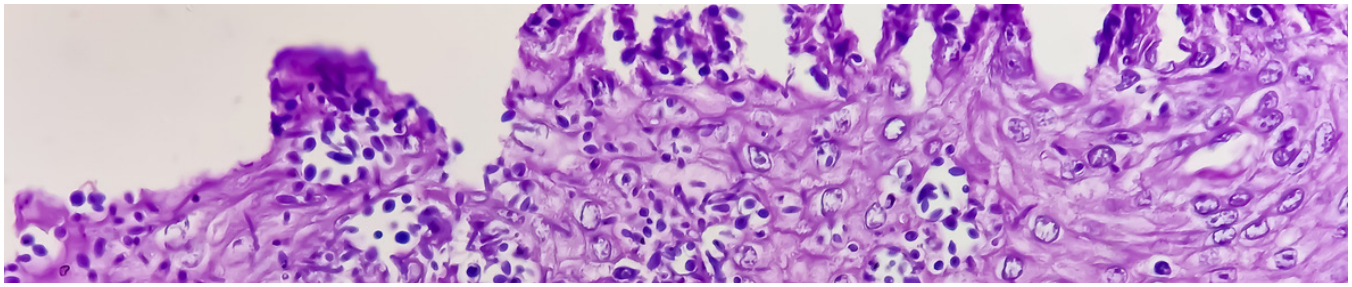
Experienced EoE Sites Improve Study Execution: Sites familiar with EoE-specific assessments, endpoint requirements, and patient management are better positioned to support efficient recruitment, accurate disease characterization, and consistent endpoint collection.

Central Reader Strategy Should Be Finalized Early: Central pathology workflows should be clearly defined before study launch, with established ownership, reconciliation processes, and specimen-tracking controls to reduce downstream operational complexity.

ADVANCING EoE CLINICAL RESEARCH WITH SPECIALIZED EXPERTISE

EoE clinical trials require more than broad gastroenterology experience. Successful execution depends on the ability to anticipate disease-specific operational risks, protect complex endpoints, maintain reliable patient-reported outcome collection, and ensure consistent histologic assessment through disciplined biopsy and central pathology workflows. These factors are especially important in EoE, where screen failure risk, variable symptom reporting, patchy disease presentation, and data flow complexity can directly affect study interpretability.

The experience gained through this study reinforced that successful EoE development requires proactive management of complex patient-reported outcomes, histologic endpoints, biopsy workflows, pathology data flow, and screening challenges. By applying these lessons learned, Medpace is well positioned to reduce operational risk, support efficient study execution, maintain endpoint integrity, and generate high-quality data and reduce execution risk in future EoE development programs.



MAKING THE COMPLEX SEAMLESS®