Quantification of mucosal eosinophils in histologically normal ileal, colonic and rectal biopsies

S.K. Liyanage

Introduction: Increased gastrointestinal tissue eosinophils are noted secondary to many known disease entities and also due to primary eosinophilic gastrointestinal disorders. There is no general agreement with regard to the normal range of eosinophils in the intestinal mucosa. This study was carried out in a population of adults suspected of having irritable bowel syndrome (IBS).

Objectives: To quantify the normal eosinophil counts in different segments of the lower gastrointestinal tract (LGIT).

Methodology: The ileal, serial segmental colonic and rectal biopsies of 25 patients, suspected as having IBS, whose endoscopic findings and the routine histological findings were normal, were included in the study. Eosinophils were counted in up to 10 high power fields (HPFs) in each of these biopsies including ileum(174HPFs), caecum(185HPFs), ascending colon(AC-165HPFs), transverse colon(TC-182HPFs), descending colon(DC-177HPFs), sigmoid colon(SC-192HPFs) and rectum (183HPFs). Using the data analysis software 'Stata', the 95^{th} percentile was obtained and taken as the upper normal limit /cut off level for mucosal eosinophils in each of these sites.

Results: The 95^{th} percentile values for the mucosal eosinophils were, ileum-20/HPF, caecum-20/HPF, AC-15/HPF, TC-12/HPF, DC-12/HPF , SC-11/HPF and rectum-6/HPF.

Conclusion: There is a variability in the normal eosinophil counts in different segments of the LGIT. This study showed that it is necessary to have different upper normal limits for mucosal eosinophil counts in each segment of the bowel rather than a single value for the entire LGIT.

Discussion – A population suspected of having IBS were used to establish the normal eosinophil counts in different segments of the LGIT, because IBS is known to be a functional disorder and the routine histological examination reveals no mucosal abnormality. It has also been proven that this population reveals no increase in mucosal eosinophils and therefore, in the local settings, was considered as the best possible sample to represent the normal population in this study.