

INTRAEPITHELIAL LYMPHOCYTE COUNT IN THE DIAGNOSIS OF COELIAC DISEASE: A HISTOPATHOLOGICAL STUDY

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Intraepithelial lymphocytes (IELs) are a normal constituent of the small intestinal mucosa. Coeliac disease (CD) is a chronic enteropathy affecting the small intestine. Small intestinal biopsy together with positive serology is the gold standard for the diagnosis of CD. A modified Marsh classification is now widely used to diagnose CD. The intraepithelial lymphocyte count is a key parameter assessed histologically to aid the diagnosis. The upper limit of normal IEL in the proximal small intestine has been reported to vary from 20-40 per 100 epithelial cells (EC). A more practical and easy method of counting villous tip lymphocytes have been used to diagnose potential coeliac disease. The objectives of the study are to determine the normal upper limit of IEL in the small intestine and to assess the diagnostic accuracy of existing criteria of IEL counts to diagnose CD. A retrospective analysis of duodenal and small intestinal biopsies formed the basis of the study. The control group (n=38) comprised randomly selected biopsies reported as normal. The study group (n=37) consisted of biopsies reported as consistent with CD. Demographic data and clinical history were collected from the records. Formalin fixed, paraffin embedded, well oriented biopsies stained with Haematoxylin and Eosin were reviewed under the light microscope (X400 magnification). The number of IELs in an uninterrupted length of surface epithelium and villous tips were counted. The mean values for IEL/100EC and IEL/villous tip were calculated for each group. The upper limits of normal were also calculated. In the control group (mean age 53yrs) the mean IEL/100EC was 3.81 (range 1-8.2). The upper limit of normal IEL/100EC was 7.78. The mean IEL/villous tip was 0.96 (range 0-3.6) and the upper limit of normal IEL/villous tip was 3.5. In those with CD (mean age 44 yrs) the mean IEL/100EC was 20.93 (range 8-38). The mean IEL/villous tip was 6.83 (range 4-12.4). If high cut off values of IEL/100EC is taken to diagnose CD many cases may be under diagnosed, particularly when the upper limit of the normal IEL count is lower for that population and region. The upper limit of normal IEL/100EC and the mean IEL/100EC in CD are considerably lower than that reported in other studies. The villous tip IEL count in both the control and study groups are also lower than reported figures. The ethnicity, country of origin and environmental factors may be partly responsible for this observation. A multidisciplinary approach in the diagnosis of CD may minimize the effects of possible regional and ethnic variation in IEL counts. Counting the villous tip IEL number appears to be more practical in routine practice when combined with other diagnostic parameters.