Are NOD2 polymorphisms linked to a specific disease endophenotype of Crohn's disease?

The complex and yet unknown etiology of Crohn's disease (CD) might consist of various disease endophenotypes, each of which represent their own pathogenesis. This review focuses on the disease endophenotype linked to polymorphisms in the nucleotide-binding oligomerization domain containing 2 (NOD2) protein and on the importance of established adherent-invasive E. coli (AIEC) in ileal mucosa. To date, there are several reports pointing to the implications of NOD2 polymorphisms in epithelial and immunological responses against microbes, but the pathological significance of NOD2 mutations in CD is not yet clarified. The enhanced number of pathogenic E. coli in the ileal mucosa of CD as compared to healthy controls may result from a genetically based failure in one of the intestinal bacteria sensing systems, like NOD2, making the ileal epithelium more prone to colonization with microbes harboring specific properties such as AIEC.

Increasing the focus on defining subgroups of patients with similar disease initiations, mechanisms of action, and manifestations in CD may be pivotal for the development and implementation of future individualized treatment strategies of benefit for the single patient at an early stage. (Inflamm Bowel Dis 2011;)

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