exposed to IBD in utero. FC levels also correlated with more pro-inflammatory bacterial profiles in early life. If confirmed in a larger sample size, these results may suggest evidence of early subclinical inflammation of which duration and consequences need to be further investigated.

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Prevalence of *Clostridium difficile* infection among hospitalised inflammatory bowel disease patients in Greece


1 Evangelismos Hospital, Gastroenterology Department, Athens, Greece, 2 Evangelismos Hospital, Microbiology Department, Athens, Greece, 3 Venizeio General Hospital, Gastroenterology Department, Heraklion, Greece, 4 Venizeio General Hospital, Microbiology Department, Heraklion, Greece, 5 University Hospital Heraklion, Gastroenterology Department, Heraklion, Greece, 6 University Hospital Heraklion, Microbiology Department, Heraklion, Greece, 7 Nikaia General Hospital, Gastroenterology Department, Athens, Greece, 8 Nikaia General Hospital, Microbiology Department, Athens, Greece, 9 University Hospital of Patras, Gastroenterology Department, Patras, Greece, 10 University Hospital of Patras, Microbiology Department, Patras, Greece, 11 Alexandra General Hospital, Gastroenterology Department, Athens, Greece, 12 Alexandra General Hospital, Microbiology Department, Athens, Greece

**Background:** *Clostridium difficile* (C. difficile) is the leading cause of antibiotic-associated colitis and nosocomial diarrhoea. Patients with inflammatory bowel disease (IBD) are at increased risk of developing *C. difficile* infection (CDI); however, data on the prevalence of CDI in Greece are limited. We sought to determine rates of CDI among hospitalised IBD patients in major tertiary referral hospitals in Greece.

**Methods:** We performed a retrospective analysis of stool culture results from hospitalised patients investigated for diarrhoea that were tested for CDI from January till December 2016. A rapid immunoenzymatic (EIA) assay (C.diff Quik check, Complete, Techlab, Blacksburg, VA, USA) was used to test for glutamate dehydrogenase (GDH). Toxins A and B were also sought in positive samples, in order to confirm CDI. Finally, CDI prevalence in IBD patients was compared with non-IBD patients.

**Results:** In total 6932 patients were tested for CDI while hospitalised. Among them, 894 patients were found positive for GDH (12.89%), while 339 were also found positive for C. Difficile toxin (4.89%). Therefore, the prevalence of CDI among all hospitalised patients was 1.6/1000 patient-days. Among them, there were 401 IBD patients presenting with diarrhoea and tested for CDI. Sixty-two patients were found positive for GDH (15.46%), while 30 were also found positive for C. difficile toxin (7.48%). Therefore, the prevalence of CDI in IBD patients was 2.5/1000 patient-days. The prevalence of CDI among IBD hospitalised patients was significantly higher than non-IBD hospitalised patients (30/401 vs. 309/6531, p = 0.013). Among the 30 IBD patients with CDI, there were 14 men and 16 women, with a mean age of 46 years. Eighteen of them had ulcerative colitis (E1 = 2, E2 = 3, E3 = 13) and 12 Crohn’s disease (A2L1B1 = 3, A2L2B1 = 3, A2L3B1 = 3, A3L1B1 = 2, A3L3B3 = 1). Six of them were receiving biologics, 3 were receiving corticosteroids (one with azathioprine and one with 5-ASA), 9 were on azathioprine monotherapy and 12 on 5-ASA monotherapy. CDI was successfully treated with metronidazole and/or vancomycin in all cases.

**Conclusions:** Data from IBD referral tertiary Greek hospitals show that CDI prevalence is higher in hospitalised IBD patients than those without IBD. CDI is a growing public health issue among hospitalised IBD patients, prompting the need for better preventative measures, as well as for early detection and treatment.

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Phenotypic and genetic features of mucosa-associated *E. coli* in Korean inflammatory bowel disease patients

C.S. Eun*, D.S. Han, C.H. Park, A.R. Lee

Hanyang University Guri Hospital, Gastroenterology, Guri, South Korea

**Background:** Adherent-invasive *Escherichia coli* (AIEC) have been reported to be implicated with pathogenesis of inflammatory bowel disease (IBD). We isolated *E. coli* strains from the colonic mucosal tissues of Korean IBD patients and characterised their genetic and phenotypic features.

**Methods:** *E. coli* strains were isolated from active colonic mucosal tissues of 42 Korean IBD patients (18 Crohn’s disease (CD) and 24 ulcerative colitis (UC)) and 9 healthy controls (HC). *E. coli* strains were phylogenotyped into A, B1, B2, or D. For AIEC identification, isolates were assayed for adheresiveness and invasiveness in Hep-2 cells, and the capacity of the adherent-invasive isolates to survive and replicate intracellularly was determined in macrophage THP-1 cell lines. The presence of various virulence genes was examined using PCR analyses.

**Results:** A total of 59 *E. coli* strains were isolated from CD (25 isolates from 16 patients), UC (27 isolates from 19 patients) and HC (7 isolates from 6 subjects). Phytype B2 made-up 45% of *E. coli* strains from IBD patients compared with 0% of HC. In virulence genotyping, the incidence of fimH gene were similar between IBD patients and HC, while the incidence of fyuA, ibeA, kpsMT II, and kpsMTI genes were higher in *E. coli* strains of IBD patients than HC. *E. coli* isolates from IBD patients were significantly more adherent and invasive than those from HC. In addition, isolates from IBD patients survived better in macrophage cell lines than those from HC. There were no significant differences in adhesion, invasion, and survival capabilities of isolated *E. coli* strains according to IBD subtypes, the presence of colonic inflammation, and the phylogenetic features of bacterial strains in Korean IBD patients, except relative higher invasion and survival level of isolates from UC than those from CD.

**Conclusions:** AIEC strains were identified from colonic mucosal tissues of Korean IBD patients. *E. coli* isolates from IBD patients showed higher incidence of various virulence genes and higher adheresiveness, invasiveness, and survival capabilities than those from HC, suggesting that AIEC may have an important role in Korean IBD patients.