

**Conclusion:** Among our county's safety net tertiary care hospital, ACT ordered in the ED frequently influenced clinical decisions. Although radiation exposure in patients with IBD is a concern, ED workers should consider ACT in IBD patients of young age with abdominal pain and elevation in WBC count. Safer imaging techniques to affect decision-making are needed.

## 1643

### Low Bone Mineral Density in Inflammatory Bowel Disease Patients with Vitamin D Deficiency in a Tertiary Care Center

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**Purpose:** Vitamin D deficiency and low bone mineral density (LBMD) are common in patients with inflammatory bowel diseases (IBD). This study attempts to assess the incidence of LBMD in IBD patients with vitamin D deficiency, and to identify additional risk factors of LBMD in this population. By identifying these additional risk factors, we can determine which IBD patient with vitamin D deficiency should undergo a DEXA scan.

**Methods:** A retrospective analysis was performed by searching our current outpatient clinic EMR system for IBD patients who had vitamin D deficiency (defined as 25 (OH) D level  $\leq$  30 ng/ml) followed by a DEXA scan within a year. Results were analyzed based on the IBD subtype (ulcerative colitis (UC) or Crohn's disease (CD)), age, gender, BMI, smoking history, prednisone use, disease duration, disease location/extent, and severity of disease.

**Results:** Forty-three patients (15 UC, 28 CD) with vitamin D deficiency had DEXA scan results available. Nine of 15 UC patients with vitamin D deficiency (60%) had LBMD: osteoporosis in 7 and osteopenia in 2. Eight of 9 were less than age 50, 4 were men, 7 had a smoking history. Six of 9 had disease for 5 years or more, 6 had pancolitis or left sided disease, and 8 had a history of prednisone use. Only 3 were underweight and 5 had mild disease. Eleven of 28 CD patients with vitamin D deficiency (82%) had LBMD, all meeting criteria for osteopenia. Nine of 11 were less than age 50, 6 were men, 5 had a smoking history. Nine of 11 had disease for 5 years or more, 10 had upper GI and/or small bowel disease, and 6 had a history of prednisone use. Only 1 was underweight, and 5 had mild disease. Although the numbers are too small for comparison, IBD patients with low vitamin D had a higher chance of a normal DEXA if they had no smoking history. There was no difference between those with a normal DEXA and those with LBMD by age, gender, disease duration, location and severity, history of prednisone use and BMI.

**Conclusion:** Sixty to eighty percent of the IBD patients with vitamin D deficiency had LBMD. Interestingly, the patients were often men and less than age 50 in contrast to the general population where LBMD is often found in female and age greater than 50. Disease extent and severity in UC patients, as well as small bowel involvement and disease severity in CD patients were not associated with a higher risk of LBMD. Only half of the patients with LBMD had a history of prednisone use. The only variable that seems to increase the risk of LBMD amongst IBD patients with vitamin D deficiency is a smoking history. In conclusion, IBD patients with vitamin D deficiency are at higher risk of LBMD and should get a DEXA scan evaluation regardless of their demographics and disease characteristics.

## 1644

### Fecal Microbiota Transplantation in Ulcerative Colitis: Review of 24 Years Experience

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**Purpose:** Fecal Microbiota Transplantation (FMT) has traditionally been employed in *Clostridium difficile* infection (CDI), achieving near 100% cure rates<sup>1</sup>. However, preliminary reports are emerging of FMT's reversal of idiopathic Ulcerative Colitis (UC)<sup>2</sup>. To date, analysis of remission rates and

treatment response to FMT in UC have not been available. At CDD, FMT has been offered as a treatment option for patients with UC since 1988. We provide an analysis of this cohort of patients aimed at documenting the success rate of this therapy.

**Methods:** A review of all UC patients who underwent FMT at our centre was conducted. UC diagnosis was confirmed clinically, endoscopically, and histologically. Patients with indeterminate colitis or Crohn's Disease were excluded from the analysis. Sixty-two patients (40M; m 42.3 +/- 11.5y; 22F m 48.45 +/- 16.49y) with active UC and follow-up results were included in the analysis. Clinical remission was defined as a 0-1 modified Powell-Tuck index and partial remission as a  $\geq$  2 point decrease. Non-response was defined as  $\leq$  2 point decrease, unchanged score, increase in score over two consecutive visits, surgical intervention, or FMT-related adverse event requiring treatment cessation.

**Results:** Overall, 91.9% of patients responded to FMT. Of these, 67.7% of patients (42/62) achieved complete clinical remission, and 24.2% of patients (15/62) achieved partial response. The remaining 8% (5/62) were treatment failures. Improvement in CRP and ESR correlated with clinical response observed in FMT patients. Twenty-one patients underwent repeat colonoscopy with a mean time to follow-up of 33 mths (range 1-198 mths). Of these 12/21 (57.1%) were found to have profound mucosal healing with a normal mucosal appearance, return of vascular pattern and no histological inflammation, but in one patient scarring was seen in areas of previously severe inflammation. A further eight patients (8/21, 38.1%) achieved normalisation of mucosa but had some isolated areas of patchy, mild inflammation. One patient (1/21, 4.8%) had remaining active colitis. FMT was well tolerated and produced no significant adverse events.

**Conclusion:** FMT achieves high response rates in UC, and can cure UC in a subset of patients. This should be followed with blinded trials and meta-analyses to establish protocols for successful remission in UC. This is the first analysis of UC response rates in relation to FMT.

**References:** 1. Borody TJ et al. *Nat Rev Gastroenterol Hepatol* 2011; 9(2):88-96. 2. Borody TJ et al. *Expert Rev Gastroenterol Hepatol* 2011; 5(6): 653-655.

**Disclosure:** Thomas J. Borody has a pecuniary interest in the Centre for Digestive Diseases, where fecal microbiota transplantation is a treatment option for patients and has filed patents in this area.

## 1645

### The Effect of Liver Transplantation for Primary Sclerosing Cholangitis on Disease Activity in Patients with Inflammatory Bowel Disease

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**Purpose:** The aims of this study were to examine the effects of immunosuppression following liver transplantation (LT) on inflammatory bowel disease (IBD) activity, and to identify predictors of IBD control post-LT, in subjects with who underwent LT specifically for primary sclerosing cholangitis (PSC).

**Methods:** A retrospective analysis of all adult patients with a pre-LT diagnosis of IBD who underwent LT for PSC over a 15-year period was performed. The primary outcome was IBD activity based on symptomatology and endoscopic assessment, and secondary outcomes included recipient mortality and post-transplant development of colorectal cancer or small bowel lymphoma.

**Results:** 105 subjects were transplanted for PSC, and 27 (26%) had a form of IBD diagnosed pre-LT and fulfilled inclusion criteria. Subjects were followed for a mean of 88.5 months. 14 subjects (52%) had stable IBD, 9 (33%) had worsening disease and 4 (15%) had clinical improvement after LT. 2 patients (7%) developed colorectal cancer and 1 patient (4%) developed small bowel lymphoma. The absence of additional maintenance therapy for IBD was found to be associated with good outcome for IBD control. The use of either infliximab or corticosteroids to control symptoms post-LT was found to be associated with poor outcome.

**Conclusion:** Most patients with PSC/IBD have a stable course of IBD post-LT. The need for infliximab or additional corticosteroids after LT is associated with worse outcome.