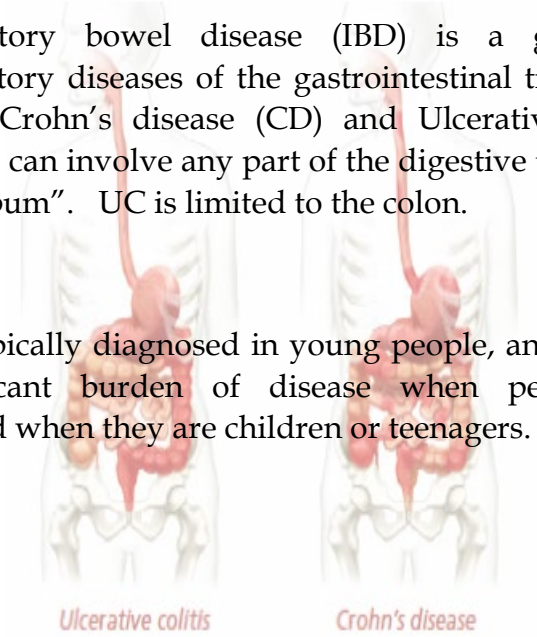
The CEGIIR Lunch'N'Learn News

What is IBD?

Inflammatory Bowel Disease
Crohn's disease (CD) and Ulcerative Colitis (UC)

Inflammatory bowel disease (IBD) is a group of inflammatory diseases of the gastrointestinal tract. IBD includes Crohn's disease (CD) and Ulcerative Colitis (UC). CD can involve any part of the digestive tract from "gum to bum". UC is limited to the colon.

IBD is typically diagnosed in young people, and there is a significant burden of disease when people are diagnosed when they are children or teenagers.



ISSUE #1, MAY 2015

- The first session of the CEGIIR IBD 101 Lunch'N'Learn Series was held on May 20, 2015 at noon in Katz 7-003.

- Today's newsletter brief is a Q & A summary by Dr. Vivian Huang of questions asked from this inaugural session.

Questions? Comments?

For inquiries, suggestions or feedback, please email Melissa Silva at: mpsilva@ualberta.ca

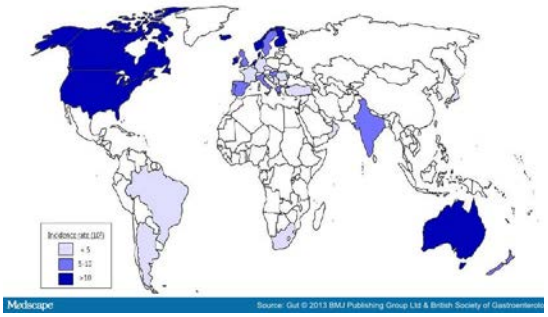
1. WHY IS PERFORMING RESEARCH IN THE FIELD OF IBD SO IMPORTANT?

In Canada, there are about 300,000 people suffering from IBD. Each person suffering from IBD deals with significant burden of disease - decreased quality of life, impact on social interactions, inability to go to school, to work, to social functions. Each person suffering from IBD who gets hospitalized due to complications (abscesses, fistula, strictures) loses productivity, may lose their jobs, may get sicker and potentially die. Each day in hospital costs the health care system $3000, and costs the patient their lost income. Medications to treat IBD can be costly and may not work if given too late in the disease.

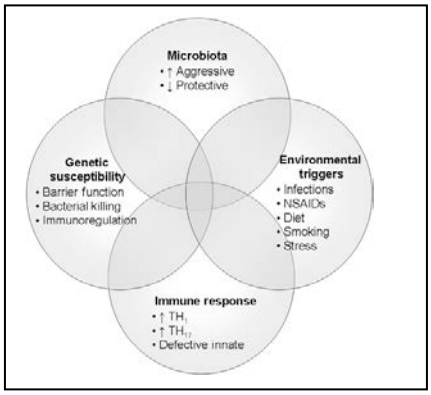
Therefore, research in the field of IBD - to study what causes IBD, why some patients have worse IBD, why some patients fail to respond to certain medications - is very important.

2. WHAT ARE SOME THEORIES ABOUT THE NORTH-SOUTH GRADIENT OF IBD?

There is a North-South gradient in North America of IBD, but in Europe, it is an East-West gradient. Some research points towards Vitamin D deficiency contributing towards the North-South gradient. Other research indicates towards environmental and dietary factors contributing towards these gradients. Developing countries in Europe and Asia are taking on the incidence and prevalence of IBD similar to developed countries - researchers believe this may be due to the change in diet and environment as countries become developed.

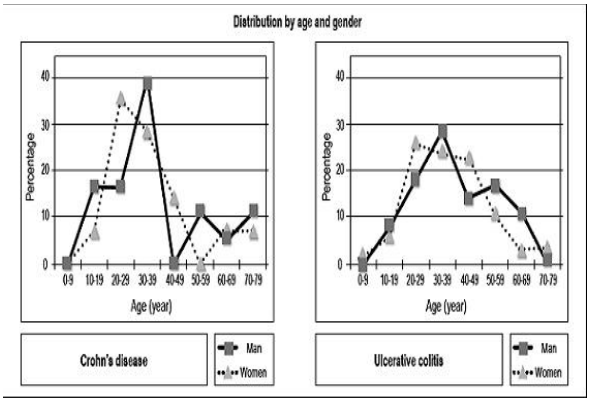


3. HOW DO YOU PREVENT IBD?



Currently, we do not know how to "prevent" IBD. IBD is multifactorial with genetic, environmental, microbiome, and immune interaction. There are certain "risk factors" such as smoking (for CD), or history of antibiotic use, which may increase the risk of developing IBD. Modifying these "risk factors" may decrease the risk of a person developing IBD. However the exact etiology of IBD is unknown and thus there is no method to "prevent" IBD.

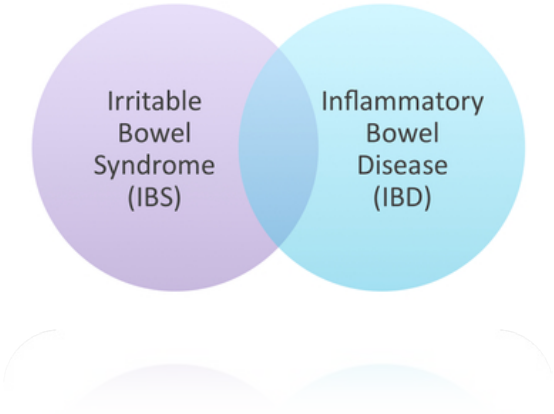
4. WHAT IS THE AVERAGE AGE OF DIAGNOSIS?



The average age of diagnosis is between 15 to 30, with a second peak for CD in the 60s.

This is important because this means that people who develop IBD have to deal with the disease during school, work, family times of their lives.

5. WHAT IS THE DIFFERENCE BETWEEN IBD & IBS?



- IBS = irritable bowel syndrome.
- IBD = inflammatory bowel disease.

IBS is a syndrome of symptoms such as diarrhea, constipation, abdominal pain. On investigations, there are no "red flags" of bloody diarrhea, weight loss, extra intestinal manifestations of IBD, or abnormal lab tests. IBD includes Crohn's disease and ulcerative colitis (and indeterminate colitis) which involves pathological inflammation of the GI tract.

6. HOW DO YOU DIAGNOSIS CROHN'S VS. ULCERATIVE COLITIS?

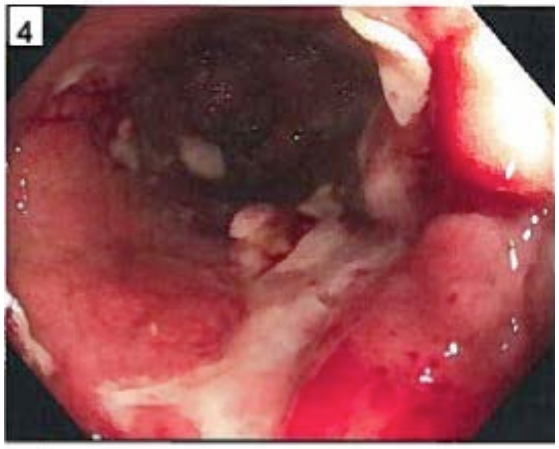
Crohn's disease can affect any part of the GI tract (gum-to-bum), whereas ulcerative colitis affects only the colon.

On history, CD patients very rarely have bloody diarrhea, but UC patients typically present with bloody diarrhea.

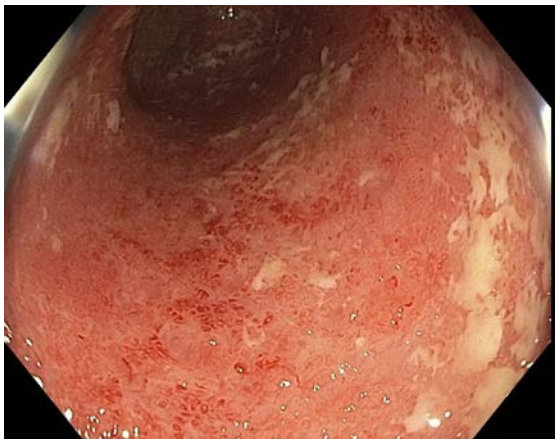
CD patients may have perianal abscesses and fistulas, which are very rare in UC.

On endoscopy, we can usually distinguish between CD and UC because CD would be patchy disease with skip lesions (top photo), but UC would be continuous inflammation and ulceration (bottom photo).

On imaging tests, CD may have skip lesions, but UC would be limited to the colon.



Crohn's disease



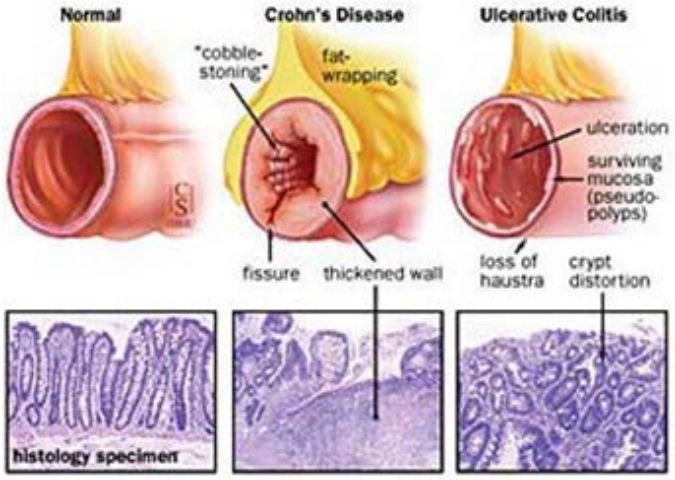
Ulcerative colitis

7. HOW ARE DIFFERENT TYPES OF IBD DIFFERENTIATED CLINICALLY?

On history, CD patients very rarely have bloody diarrhea, but UC patients typically present with bloody diarrhea. CD patients may report episodes of "obstruction" when food does not pass through the GI tract.

CD patients may have perianal abscesses and fistulas, which are very rare in UC. On examination, clinicians may see the fistulas, or feel an abdominal mass if there is internal abscess or inflammation, in CD patients.

8. WHAT DISTINGUISHES CD FROM UC IN TERMS OF PATHOLOGY?

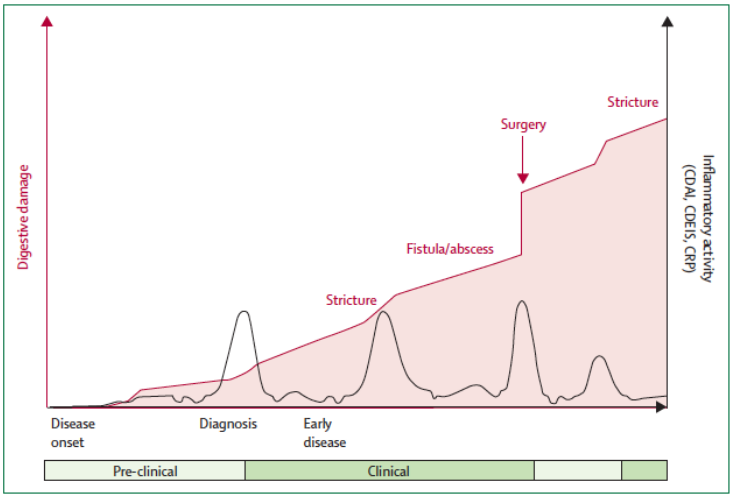


On pathology, CD may have "granulomas" - these are not seen in UC biopsies. Interestingly, other diseases that may have granulomas include other granulomatous diseases (e.g. tuberculosis).

9. WHAT IS THE BEST TREATMENT FOR IBD?

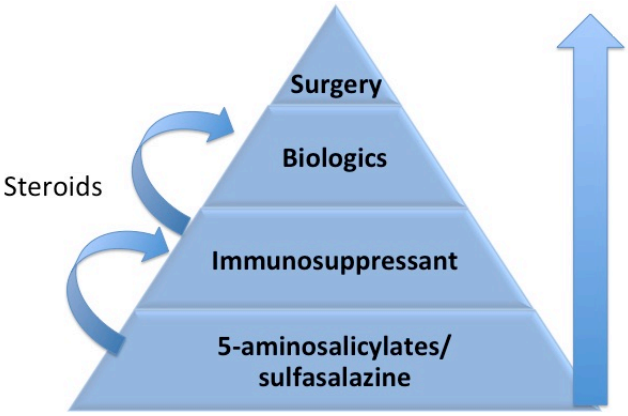
The best treatment for IBD is the treatment that results in the best outcomes for the patient, with minimal risk. This means that although some medications or surgeries may seem to provide the "best outcomes", if they come at great risk that outweighs the benefits, then they may not be the best treatment for IBD for that patient. Therefore, trying to personalize IBD therapy using the available evidence from clinical trials and other research studies is very important.

The diagram on the right shows the progression of disease for CD. By the time patients present with symptoms, the disease has already been present. Therefore it is important to diagnose and treat IBD early.

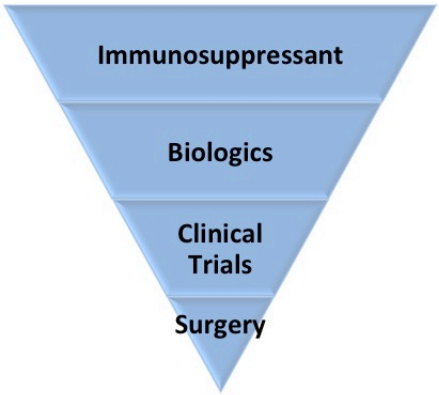


10. WHEN SHOULD ANTI-TNF BE INITIATED DURING TREATMENT?

Anti-TNF should be initiated during treatment for certain patients with IBD. Mild cases of IBD may not need anti-TNF. Typically, patients who have moderate to severe CD or UC may require escalation of therapy to anti-TNF. High risk patients such as those with fistulizing CD would benefit from anti-TNF therapy. In the past, clinicians would follow the "pyramid of treatment" starting with the mildest medications and working up to the top as “step-up approach”, but now clinicians tend to be more aggressive, and follow the "top down treatment" by escalating patients rapidly, or starting with immunosuppressants and anti TNF earlier.



Step up approach



Top down approach

High Risk Patients

- severe disease
- high risk UC
  - admitted to hospital
  - corticosteroids
  - high CRP
- high risk CD
  - long segment (>10cm)
  - rectal disease
  - perianal fistulas
  - Smoking
  - corticosteroids
  - young < 40yr at diag.

11. WHAT RECENT ADVANCES HAVE BEEN MADE IN TREATING PATIENTS WITH IBD?

Recent advances in the treatment of IBD include development of several new medications including Vedolizumab (anti-alpha-4-beta-7 antibody), Ustekinumab (anti-IL12/23), and other new "biologic" medications. In addition, as researchers begin to understand the importance of microbiome in IBD, researchers are studying dietary factors, and ways to change the microbiome (e.g. fecal microbiota transplantation) that could help with disease control.

11. CAN YOU EXPLAIN YOUR APPROACH IN TREATING IBD, AND HOW THAT MIGHT DIFFER FROM HOW YOUR COLLEAGUES TREAT IT?

My approach to treating IBD involves the entire patient, meaning that I try to treat the patient as a whole, so that they can resume quality of life, go back to school or work or be with their family. I like to reassess the patient's disease status and influence on their life on a regular basis through regular clinical questions, regular blood work, and endoscopy or imaging tests as required. If a patient requires steroids every year, or cannot taper off steroids after 3 months, then I escalate their therapy to a steroid-sparing agent (e.g. immunomodulator or biologics). I then quickly reassess their response to the new medication, and make adjustments as needed.

My approach may differ from other clinicians because some clinicians still follow the "pyramid of treatment" step-up approach, some clinicians follow the "top down" approach, but my approach is in the middle with rapid escalation of therapy stepping up the pyramid.

12. WHAT DIETARY CHANGES CAN ALLEVIATE IBD?

Researchers are currently studying dietary factors that influence IBD. However there are certain dietary changes that can alleviate symptoms of IBD. A low FODMAP diet is a diet that minimizes the foods that bacteria like to break down into gas - therefore minimizing the gas bloating pains patients with IBD may have. A low fibre diet in the acute flare period may help with symptoms as low fibre diet tends to be low FODMAP diet. A lactose free diet may be helpful during acute flares of IBD as the milk sugars sometimes worsen diarrhea.

For more information on low FODMAP diet and other diets, please go to www.cdhf.ca.

Canadian Digestive Health Foundation

Did you know?

You can find up-to-date information on IBD and other digestive disorders at www.cdhf.ca

You can learn more about diagnosis, treatment and even stories of those currently living with IBD!

Fast Facts

- There is no cure for IBD
- IBD is about as common as Type I diabetes or epilepsy
- Total costs of IBD in Canada are estimated at 2.8 billion (2012)
- People with IBD are at increased risk of colorectal cancer! Thus, the need for surveillance colonoscopies.

CONTINUED: MORE ON THE FODMAP DIET…

Foods suitable on a low-fodmap diet

fruit	vegetables	grain foods	milk products	other
fruit banana, blueberry, boysenberry, canteloupe, cranberry, durian, grape, grapefruit, honeydew melon, kiwifruit, lemon, lime, mandarin, orange, passionfruit, pawpaw, raspberry, rhubarb, rockmelon, star anise, strawberry, tangelo Note: if fruit is dried, eat in small quantities	**vegetables** alfalfa, artichoke, bamboo shoots, bean shoots, bok choy, carrot, celery, choko, choy sum, endive, ginger, green beans, lettuce, olives, parsnip, potato, pumpkin, red capsicum (bell pepper), silver beet, spinach, summer squash (yellow), swede, sweet potato, taro, tomato, turnip, yam, zucchini **herbs** basil, chili, coriander, ginger, lemongrass, marjoram, mint, oregano, parsley, rosemary, thyme	**cereals** gluten-free bread or cereal products **bread** 100% spelt bread **rice** **oats** **polenta** **other** arrowroot, millet, psyllium, quinoa, sorgum, tapioca	**milk** lactose-free milk, oat milk*, rice milk, soy milk* *check for additives **cheeses** hard cheeses, and brie and camembert **yoghurt** lactose-free varieties **ice-cream substitutes** gelati, sorbet **butter substitutes** olive oil	**sweeteners** sugar* (sucrose), glucose, artificial sweeteners not ending in '-ol' **honey substitutes** golden syrup*, maple syrup*, molasses, treacle *small quantities

Eliminate foods containing fodmaps

excess fructose	lactose	fructans	galactans	polyols
fruit apple, mango, nashi, pear, tinned fruit in natural juice, watermelon **sweeteners** fructose, high fructose corn syrup **large total fructose dose** concentrated fruit sources, large serves of fruit, dried fruit, fruit juice **honey** corn syrup, fruisana	**milk** milk from cows, goats or sheep, custard, ice cream, yoghurt **cheeses** soft unripened cheeses eg. cottage, cream, mascarpone, ricotta	**vegetables** asparagus, beetroot, broccoli, brussels sprouts, cabbage, eggplant, fennel, garlic, leek, okra, onion (all), shallots, spring onion **cereals** wheat and rye, in large amounts eg. bread, crackers, cookies, couscous, pasta **fruit** custard apple, persimmon, watermelon **miscellaneous** chicory, dandelion, inulin	**legumes** baked beans, chickpeas, kidney beans, lentils	**fruit** apple, apricot, avocado, blackberry, cherry, lychee, nashi, nectarine, peach, pear, plum, prune, watermelon **vegetables** cauliflower, green capsicum (bell pepper), mushroom, sweet corn **sweeteners** sorbitol (420) mannitol (421) isomalt (953) maltitol (965) xylitol (967)

Thank you for attending the first session of the CEGIIR GI Lunch'N'Learn series.
We look forward to having you attend future sessions and incorporating your feedback!

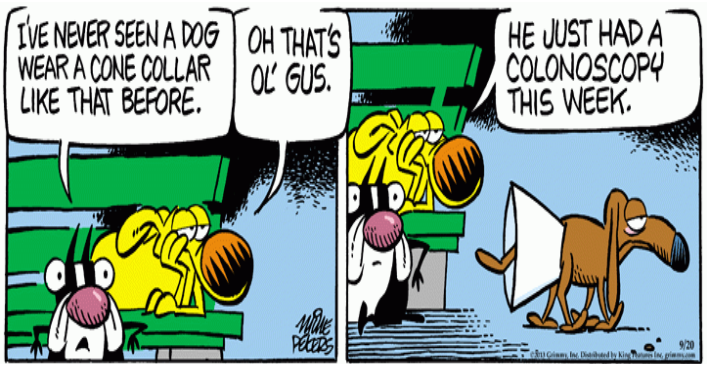
Next CEGIIR GI Lunch'N'Learn session:

When? June 3rd, 2015
Where? Katz 7-003
What? "Everything You Wanted To Know About Liver, But Were Afraid To Ask"
Who? Dr. Andrew Mason

Proposed topics to be discussed this summer:

- Microbiome and disease
- CEGIIR - from patient to lab
- Lab techniques
- Liver diseases
- Qualitative research
- How to make abstracts and posters
- Pediatric GI diseases

Cartoon of the Day



Lastly…

Special thanks to Dr. Vivian Huang for founding the CEGIIR Lunch'N'Learn series, Brian Reuter, Melissa Silva, contributing scientists (you know who you are), and of course, YOU, for all your help in piloting our first session.

PROFILING TRAINEES SECTION

Every week we will profile trainees doing related research to each session's topic of CEGIIR GI Lunch'N'Learn discussion.

Keep an eye on this section, your name may be here!

Contributing author: Dr. Vivian Huang; Editor: Melissa Silva

REFERENCES

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  - http://www.cdhf.ca/
- **Microscope image:**
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- **Geographical Variability and Environmental Risk Factors in Inflammatory Bowel Disease**
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- **Dr. Sartor's Venn Diagram**
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- **Age and gender distribution of patients with IBD**
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  - http://www.cdhf.ca/bank/document_en/32-fodmaps.pdf
  - http://ibs.aurametrix.com/2011/04/fodmap-diet.html
- **Endoscopy pictures used with permission of Dr. Vivian Huang**
- **Step-up & top-down diagrams used with permission of Dr. Vivian Huang**