

Otterbein University

Digital Commons @ Otterbein

Nursing Student Class Projects (Formerly MSN)

Student Research & Creative Work

2017

Ulcerative Colitis Pathology

Shannon Beitel
beitel.4@osu.edu

Follow this and additional works at: https://digitalcommons.otterbein.edu/stu_msn



Part of the [Nursing Commons](#)

Recommended Citation

Beitel, Shannon, "Ulcerative Colitis Pathology" (2017). *Nursing Student Class Projects (Formerly MSN)*. 225.

https://digitalcommons.otterbein.edu/stu_msn/225

This Project is brought to you for free and open access by the Student Research & Creative Work at Digital Commons @ Otterbein. It has been accepted for inclusion in Nursing Student Class Projects (Formerly MSN) by an authorized administrator of Digital Commons @ Otterbein. For more information, please contact digitalcommons07@otterbein.edu.

Otterbein University, Westerville, Ohio

- Ulcerative colitis is a disease of intermittent flare-ups followed by periods of remission when no signs or symptoms are present.
- During a flare-up of ulcerative colitis, the signs and symptoms can range from the following:
 - Abdominal pain and cramping
 - Blood or pus in the stool
 - Diarrhea
 - Frequent urgency to have bowel movements
 - Tenesmus (Feuerstein & Chieftetz, 2014).
- Other symptoms include nausea, low grade fever, anemia and weight loss as well as extra intestinal symptoms that include joint disorders and arthritis (Harris & Jelemensky, 2014).

- The underlying pathophysiology of ulcerative colitis can be described as inflammation and ulceration of the mucosal lining of the colon.
- The inflammation usually starts within the area of the rectum and progresses through the colon (Harris & Jelemensky, 2014).
 - The cause of ulcerative colitis is still unknown, but researchers believe that immune system abnormalities and genetics play a role. Risk factors such as environmental factors, dietary habits, use of oral contraceptives, and previous infections are also under investigation (Harris & Jelemensky, 2014).
 - Ulcerative colitis is "limited to the mucosal layers, with varying degrees of infiltrates from lymphocytes, plasma cells, and granulocytes, it also includes the presence of Paneth cell metaplasia which is indicative of chronic inflammation" (Feuerstein & Chieftetz, 2014).
 - Many research studies are underway regarding the adaptive and innate immunologic process involved in ulcerative colitis. Research has found a cytokine, IL-23, which is a key process in the early response to microbes, is found to be altered in patients with ulcerative colitis, further suggesting its role in chronic intestinal inflammation (Zhang & Li, 2014).

- Ulcerative colitis can be diagnosed by sigmoidoscopy and biopsy.
- In addition to obtaining a biopsy for diagnosis, laboratory tests can also be obtained.
- Blood tests such as erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP) can be collected to determine inflammation within the body.
- Stool studies can be obtained to rule out other disorders such as infections caused by toxins, bacteria, viruses or parasites.
- The definitive diagnosis however, comes from a colonoscopy and biopsy. (Harris & Jelemensky, 2014).

- The significance of the pathophysiology of ulcerative colitis is that researchers still do not know the cause of the disease, but it is highly evident that there is an immunologic alteration.
- Ulcerative colitis is considered an auto-immune disorder, as the body's inflammation system is working in overtime.
- Many of the treatments are aimed at decreasing inflammation and reducing the body's immune system.
- Medications used for these factors include aminosaliclates, corticosteroids, thiopurines, anti-tumor necrosis factor agents, selective adhesion molecule inhibitors and probiotics (Feuerstein & Chieftetz, 2014).

(image retrieved from:
<https://cdn.paindoctor.com/wp-content/uploads/2015/08/ulcerative-colitis.jpg>)

- The nursing role is extremely important in the disease management of patients with ulcerative colitis.
- Medication adherence can frequently be an issue in patients with this disease, as there are periods of time when there are no signs or symptoms. The patient must be thoroughly educated by nursing to take medication regularly regardless of symptoms or not. This is important as the disease has periods of remission followed by periods of flare-ups (Dudley-Brown, 2012)
 - Open communication between the nurse and patient can help combat a flare-up at the start of symptoms instead of when the symptoms become so bad that the patient needs to seek hospital treatment.
 - Advanced practice nurses and nurses alike can provide holistic care to patients by addressing not only their physiological problems but also their psychological problems involved with this disease (Dudley-Brown, 2012).

In conclusion, ulcerative colitis is a complicated disease that still has a lot of unknowns. As researchers continue to investigate what may cause the disease, healthcare professionals continue to best manage signs and symptoms as best they can. Many of those with ulcerative colitis fall under the category of having mild to moderate symptoms, with only a small percentage of patients having severe cases of the disease. With this being said, most patients with ulcerative colitis can be medically managed with goals of prolonged periods of remission. Those with severe cases of the disease may opt for surgical management, by removing part or all of colon. Researchers continue to look for reasons that may trigger the body's immune system to attack itself. It is with great hope that researchers can soon find a cause for this debilitating disease. In hopes that one day healthcare professionals can treat the disease more efficiently and/or prevent it from occurring all together.

(Image retrieved from:
<https://www.slideshare.net/waleedelrefaey5/ulcerative-colitis-44970410>)

- Adams, S., & Bornemann, P. (2013). Ulcerative colitis. *American Family Physician*, 87(10), 699-705.
- Dudley-Brown, S. (2012). Ulcerative colitis from patients' viewpoint: a review of two internet surveys. *Gastroenterology Nursing*, 35(1).
- Esko, E. (2016). Understanding crohn's and colitis. *Macrobiotics Today*, 57(3), 14-17.
- Feuerstein, J., & Chieftetz, A. (2014). Ulcerative colitis: Epidemiology, diagnosis and management. *Mayo Clinic Proceedings*, 89(11), 1553-1563.
- Harris, H., & Jelemensky, L. (2014). Managing the ups and downs of ulcerative colitis. *Nursing*, 44(8), 42-45.
- Michielan, A., & D'Inca, R. (2015, October 25). Intestinal permeability in inflammatory bowel disease: pathogenesis, clinical evaluation, and therapy of leaky gut. Retrieved May 29, 2017, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4637104/>.
- Molnar, T. (2014). Pathogenesis of ulcerative colitis and crohn's disease: similarities, differences and a lot of things we do not know yet. *Journal of Cellular & Cellular Immunology*, 05(04).
- Sasaki, M., & Klapproth, J. A. (2012). The role of bacteria in the pathogenesis of ulcerative colitis. *Journal of Signal Transduction*, 2012, 1-6.
- Sroufe, I., Gardener, T., Quarnberg, S., & Wiedmeier, P. (2017). Insights into the pathophysiology of ulcerative colitis: interleukin-13 modulates STAT6 and p38 MAPK activity in the colon epithelial sodium channel. *The Journal of Physiology*, 421-422.
- Zhang, Y., & Li, Y. (2014, January 07). Inflammatory bowel disease: pathogenesis. Retrieved May 29, 2017, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3886036/>.