The Management of Ulcerative Colitis and Crohn’s Disease

Course Description
The Purpose of this Continuing Education Course is to discuss the management and care of ulcerative colitis and crohn’s disease. Ulcerative colitis and crohn’s disease is one of major inflammatory conditions that affect the large and small intestines of the gastrointestinal (GI) tract. This course will give a brief overview of the causes, management, care, and treatments.

Objectives

1. Describe the characteristics of ulcerative colitis, and crohn’s disease

2. Identify the causes of ulcerative colitis and crohn’s disease.

3. Discuss Common denominators of risk of ulcerative colitis and crohn’s disease.

4. Evaluated the approaches on the treatment of ulcerative colitis and crohn’s disease.
5. Understand the symptoms of ulcerative colitis, and crohn’s

6. Discuss the reason for surgery as an alternative treatment.

7. List medication options ulcerative colitis and crohn’s disease.

8. Discuss the options for individual living with ulcerative colitis and crohn’s disease.

9. Identify the prognosis of ulcerative colitis and crohn’s disease.

The Management of Ulcerative Colitis and Crohn’s Disease

Introduction

According to Kyaw et al, (2014) ulcerative colitis is a characterized by chronic relapse and remission of the gastrointestinal tract, with debilitating symptoms, such as pain, nausea, fever and diarrhea, that may impair the quality of life. Ulcerative colitis shares numerous symptoms associated with Crohn’s disease and collectively they are termed inflammatory bowel diseases (IBD) (Hwang et al, 2014). Nonetheless the Karlinger et al, (2000) illustrates that the two diseases immunological responses differ.

Certain individuals lacks the helpful digestive bacteria that aids in destroying foreign or harmful agents that make their way into the digestive tract. These agents can cause the body to attack its own system by white blood cells-triggering ulcers, inflammation, the thickening of tract walls, and lead to the diagnosis of an Inflammatory Bowel Disease (IBD). Crohn’s Disease and Ulcerative colitis are diseases that both fall under the category of IBD. While they share many similarities, particularly in the area of symptoms, it is crucial to remember that they are not identical and typically affect...
different portions of the body. The prevalence of Ulcerative colitis and Crohn’s Disease together affect over 2 million people in the U.S. alone (CDC, 2014; Karlinger et al, 2000).

**Background**

In 1932 Dr. Burril B. Crohn and a group of colleagues first identified Crohn’s Disease (Aufses, 2001). The etiology of disease was discovered as a chronic inflammatory disease that can affect patients in any portion of their gastrointestinal tract (the portion of the body directly involved in the processing of ingestion, digestion, and elimination including the mouth, esophagus, stomach, intestines, and anus), but is most commonly known to appear in the final portion of the small intestine, also known as the ileum or in the colon, also known as the large intestine. Crohn’s causes inflammation of the tract’s tissue causing the patient to experience debilitating pain and disruption in digestion, which can interrupt normal activities and lead to hospitalization.

Ulcerative colitis is also a chronic inflammatory disease that creates ulcers and sores on the lining of the large intestines also known as the colon. It begins gradually and can increase over time, much like Crohn’s Disease. While Crohn’s can affect small or large intestines, Ulcerative colitis is limited to the large intestine. Xavier and Podolsky, (2007) illustrates that ulcerative colitis has a multifaceted, etiology and results from a functional disorganization of both the natural and adaptive immune responses against microbial bacterial flora in the lumen of the intestine.
Causes

While there is no distinct cause of Crohn’s disease at this time, there are some commonly identified denominators of its affected patients that medical science has identified are failures in the immune system and genetics/heredity. It is speculated there is a potential for a yet unidentified virus or bacterium in the body may trigger the immune system to lose the ability to defend itself. It is also thought that there is a genetic link, but many people suffering with Crohn’s do not have a family history and this is still being examined (Bafford, 2012; Xavier and Podolsky, 2007)

Common denominators of risk include:

a. Age-it is common to develop Crohn’s before the age of 30 and the majority of patients are between 16 and 40 years of age.

b. Ethnicity – Crohn’s is found amongst many ethnicities but it is more common of whites and those with Eastern European (Ashkenazi) Jewish descent.

c. Smoking Cigarettes – a controllable risk factor that can exacerbate Crohn’s post development as well.

d. Nonsteroidal anti-inflammatory medications like Motrin IB, Advil, Aleve, Anaprox that are found to not cause Crohn’s but increase inflammation of the bowels that increases symptoms.

e. Location – Crohn’s is diagnosed in higher numbers in industrialized countries and urban areas (National Institute of Health, 2015).
Ulcerative colitis is caused by the same lack of helpful bacteria in the gastrointestinal tract. While research has shown evidence that specific abnormal genes are common in people with the disease, there is not currently proof of a genetic link. There are still some scrutiny regarding diet and stress being related causes, but no statistical foundation has been set on these claims (Anderson, Boucher, Lees, Franke, and D'Amato, 2011; National Institute of Health, 2015).

**Common denominators of risk include:**

- **Age**-it is common to develop Crohn’s before the age of 30, may occur at any age, but can also be newly diagnosed at 60.
- **Ethnicity** – Crohn’s is found amongst many ethnicities but it is more common of whites and those with Easter European (Ashkenazi) Jewish descent.
- **Isotretinoin use**- A popular topical cream used to treat cystic acne and commonly known as Accutane has been investigated but has not yet been clearly associated as a definite risk (Anderson, Boucher, Lees, Franke, and D'Amato, 2011; National Institute of Health, 2015).

**Symptoms**

Symptoms of Crohn’s vary widely. Diarrhea, fatigue, mouth sores, intestinal cramping, fever, blood in the stool, weight loss and reduced appetite, and perianal disease where fistulas form around the anus and cause draining, pain, and leakage. There may also be skin, eye, and joint pain and/or inflammation as well as swelling of the liver or bile ducts. Children may become stunted in growth and sexual development. Symptoms can be mild or extremely strong.
Some symptoms unique to ulcerative colitis include anal bleeding, the need for urgent bowel movement, exhaustion, and skin rashes. In comparison to Crohn’s, ulcerative colitis features many of the same symptoms such as eye, joint pain and soreness, diarrhea. The lack of ability to absorb nutrients clearly affects the body in similar ways in the case of these two diseases. Complications of ulcerative colitis include: severe bleeding, perforated colon, increased blood clot risk, dehydration, osteoporosis, increased risk of colon cancer, toxic megacolon (rapidly swelling colon), and on the rare occasion to liver disease (Anderson, Boucher, Lees, Franke, and D'Amato, 2011; National Institute of Health, 2015).

**Tests**

Doctor’s may begin to approach testing for Crohn’s with simple options like reviewing family history of diseases, a physical exam - feeling through the skin various portions of the abdomen, require a stool sample to check for blood, or a blood test to look for infections or anemia in the blood. In order to become increasingly conclusive according to the National Institute of Health, (2015) they may perform any of the following:

- Capsule or Double Balloon Endoscopy – Capsule involved ingesting a camera contained in a capsule that films as it travels through the body, allowing the doctor hours of video footage to examine. The capsule exits with the stool as normal. Double Balloon involves a longer scope than is allowed for endoscopy to be inserted into the small intestine. If the capsule endoscopy does not allow for a
diagnosis, but Crohn’s is still suspected, this helps to clarify further for the physician.

- Magnetic Resonance Imaging (MRI) – A magnetic field is used in combination with radio waves to capture detailed images of the tissues and organs. This is excellent for examining the status of anal fistulas or the small intestine depending on the type of MRI being done (pelvic or enterography).

- Computerized Tomography (CT) – an enhanced X-ray taken by a technician can help the doctor see the entirety of the large and small intestines (bowels). This is increasingly popular over the barium X-ray option.

- Flexible sigmoidoscopy- a lit tube that is inserted into the colon in order to observe the final portion of the colon known as the sigmoid.

- Colonoscopy – inserting a camera into the rectum to examine the walls of the lower intestine. Samples may also be taken at this time. The doctor would look for granulomas, which are inflammatory cells. If found, that could confirm a Crohn’s diagnosis.

- Small bowel imaging – Barium is ingested in a liquid concoction so that X-ray, MRI, or CT can be taken for a more defined visual of the small intestine. This allows for better assessment for areas that cannot be viewed by colonoscopy.

Ulcerative colitis testing similarly consists of family history review, stool or blood testing to examine for white blood cells or anemia, a colonoscopy while extracting cell samples, endoscopy, or sigmoidoscopy (National Institute of Health, 2015).
Treatment

The treatment of Ulcerative Colitis, and Crohn's disease depend on the severity. The immediate goal of medical therapy is to induce remission as expeditiously as possible using the least toxic agents (Bafford, 2011). Any number of medications, therapies, surgeries, or diets may be prescribed to alleviate the symptoms of Crohn’s. A doctor may prescribe bowel rest, which involves refraining from ingesting foods in a traditional manner, instead using feeding tubes, intravenous nutrition, or liquids only to allow for the intestines to ease in workload in an attempt to reduce the inflammation. Also, a special diet reducing fiber may ease the intestinal workload.

Diet

It is always best to go less invasive to most invasive. Therefore a low residue diet is recommended. Residue refers to poorly digested food, such as insoluble fiber that can contribute to stool bulk and increased bowel movements and this diet contains less than 15g fiber per day (Cope, 2014). Doctors may also require patients with Crohn’s to refrain from eating irritating foods such as sodas, spicy, fried, dairy alcohol, and caffeine, or other such options. Patients may be advised to increase liquids, consume smaller meals, and begin vitamin supplements and other changes in increase nutrition while struggling to digest.

Surgeries

Surgeries depend on the symptoms that are in need of addressing. Fistulas may be closed and abscesses may need to be adequately drained. strictureplasty is required when areas of the intestine narrow restrictively and a diseased area of the intestines may be
removed and attached to healthier portions during a small bowel resection surgery. A small bowel resection removes a damaged portion of small intestine and reconnects the healthy areas. A subtotal colectomy is a similar procedure, reconnection healthy portions of the large intestines. Even with a successful surgery, it is very common for the same symptom to affect the same area after a period of time. Surgery is a last-resort option that is often called upon due to the nature of Crohn’s disease. At least one half of those afflicted will require some form of surgical intervention. Unfortunately, surgery is not a curative measure (Mayo Foundation for Medical Education and Research, 2015).

**Medication**

A wide array of medications can also be used in the fight against inflammation of the bowels such as antibiotics that can treat infections caused by fistulas and reduce harmful bacteria in the digestive tract like Ciprofloxacin or Metronidazole. Anti-inflammatory drugs that are commonly used are Oral 5-aminosalicylates that help those with Crohn’s affective the colon, but not the small intestine. Corticosteroids like prednisone that reduce inflammation but have numerous potential side effects and should be used with caution and as a last resort for short periods of treatment only (3-4 months) (Mayo Foundation for Medical Education and Research, 2015; Ananthakrishnan et al., 2012; Punekar, and Hawkins, 2010).
Drugs that help to suppress and thus control the immune system have been found helpful for the treatment of ulcerative colitis and Crohn’s disease, usually used in combination rather than alone. These include:

<table>
<thead>
<tr>
<th>Medication for Ulcerative Colitis and Crohn’s Disease</th>
<th>Action</th>
<th>Side Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methotrexate Meth-otrek-sat</td>
<td>Methotrexate is an inhibitor of dihydrofolate reductase. Blocks cell metabolism inducing remission of Crohn’s Disease</td>
<td>Bone Marrow Suppression</td>
</tr>
<tr>
<td>Mercaptopurine Mer-kap-toe-pyoor-een</td>
<td>Disrupts DNA, and RNA synthesis. Kills rapidly proliferating Cell. In Crohn’s patients, mercaptopurine, can induce remission, which is the goal since no permanent cure is available.</td>
<td>Reduces production of white and red blood cells. Anemia, Leukopenia, and Thrombocytopenia *Regular blood count is necessary.</td>
</tr>
<tr>
<td>Azathioprine Ay-za-thye-oh-preen</td>
<td>Management of Ulcerative Colitis and Crohn's disease Suppression of cell-mediated immunity and altered antibody formation. Research has also shown that azathioprine may reduce the need for steroid treatment for Ulcerative Colitis, and Crohn’s Disease, that can cause uncomfortable side effects.</td>
<td>Anemia, Leukopenia Thrombocytopenia, and Pancytopenia</td>
</tr>
<tr>
<td>BCG Bacilli Calmette-Guerin</td>
<td>The BCG vaccine has had some success in trials with the treatment of Crohn's Disease. While the BCG vaccine</td>
<td>BCG can include diarrhea and nausea. By lowering the dosage, side effects seemed to diminish.</td>
</tr>
<tr>
<td>Adalimumab a-da-limu-mab</td>
<td>This drug is called tumor necrosis factor (TNF)- resulting in anti-inflammatory and anti-proliferative activity. Used for patients with moderate to severe</td>
<td>These drugs also are associated with a small risk of developing certain cancers such as lymphoma and skin cancers. Patient with pre-existing conditions such as Tuberculosis,</td>
</tr>
<tr>
<td>Drugs</td>
<td>Description</td>
<td>Side Effects</td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Cyclosporine Si-klo-spor-een</td>
<td>Cyclosporine is an immunosuppressant normally reserved for Crohn’s and Ulcerative colitis disease for patients who haven't responded well to other medications.</td>
<td>Cyclosporine has the potential for serious side effects, such as kidney and liver damage, seizures, and fatal infections, and is not for long-term use. There's also a small risk of cancer, so let your doctor know if you've previously had cancer.</td>
</tr>
<tr>
<td>Aminosalicylates Sulfasalazine (Azulfidine)</td>
<td>These drugs can be effective in reducing symptoms of ulcerative colitis.</td>
<td>GI distress and headache.</td>
</tr>
<tr>
<td>Vedolizumab</td>
<td>Approved for treatment of ulcerative colitis for people who don't respond to or can't tolerate biologics and other treatments. It works by blocking inflammatory cells from getting to the site of infection.</td>
<td>Associated with a small risk of infection and cancer.</td>
</tr>
<tr>
<td>Corticosteroids</td>
<td>These drugs, which include prednisone and hydrocortisone, are generally reserved for moderate to severe ulcerative colitis that doesn't respond to other treatments. They are given orally, intravenously, or by enema or suppository, depending on the location affected.</td>
<td>Corticosteroids have numerous side effects, including a puffy face, excessive facial hair, night sweats, insomnia and hyperactivity. More-serious side effects include high blood pressure, diabetes, osteoporosis, bone fractures, cataracts, glaucoma and increased chance of infection. They are not usually given long term.</td>
</tr>
</tbody>
</table>


Ulcerative colitis may require various medications or surgeries or both just as Crohn’s does. While there is a cure for ulcerative colitis. In a surgical procedure known as a protocolectomy the entirety of the colon and the rectum is removed (Punekar, and Hawkins, 2010). The patient has the option to elect for a ileoanal anastomosis where the surgeon then constructs a pouch using the ileum, the final portion of the small intestine and directly attaches it to the anus, allowing for fairly normal waste expulsion. If that is not an option, then the ileum can be attached to a hole in the abdomen called an ileal stoma where waste is expelled without control every time the body experiences peristalsis (the movement of the organ walls that push food and liquids through the gastrointestinal tract) into an external bag.

Medications used to improve or encourage remission in patients with ulcerative colitis include aminosalicylates, immunomodulators, corticosteroids, and biologics/anti-TNF therapies. Physicians may also utilize IV, suppositories, enemas, and rectal foams. They may also advise patients to avoid fibrous foods and sodas, drink more liquids, eat small meals, and limit dairy to identify foods that cause problems for the patient (Mayo Foundation for Medical Education and Research, 2015).

**Prognosis**

The prognosis for patients with Crohn’s is good with care and treatment. While there is no cure, patients can exercise any number of options to treat the symptoms and work toward a remission period where no symptoms are detected for weeks or sometimes years.
The prognosis for patients with ulcerative colitis is excellent with care and treatment, however there is an increased risk of colon cancer unless the colon is removed in a proctocolectomy. The only option to no longer suffer is to remove the colon. The urgent need to expel the bowels amongst its many other symptoms causes much strife for patients, but there is potential for remission and treatment can potentially alleviate the symptoms enough to manage the disease effectively. Patients should avoid stress, monitor their cancer risk.

**Prevention**

There is no way to prevent Crohn’s or ulcerative colitis from occurring. With crohn’s disease patients can treat the symptoms and try work towards a period of remission through increasing healthy and recommended food options and following all prescribed treatments. Ulcerative colitis’s patients can also treat the symptoms and try work towards a period of remission and if symptoms or cancer risk are severe enough, patients may be eligible for surgical colon removal.

**Conclusion**

While there is no cure for Crohn’s, the symptoms are varied and chronic and the disease will continue to reoccur over one’s lifetime. However, combined with improved lifestyle, medication, and if necessary surgery there is a possibility for remission for weeks or years. The right combination of treatments or surgery can make the condition more bearable with time.

The removal of the colon through proctocolectomy is the only permanent solution to easing ulcerative colitis symptoms. Professional care and supervision will enable...
patients to discover if a combination of medication and diet can facilitate remission or a more tolerable state (Bafford, 2012).
References


