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Crohn's Disease

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Crohn's Disease is a systemic autoimmune disease that affects many adults and children in the United States. The prevalence of Crohn's disease in the United States is 201 per 100,000 adults. Crohn's disease is an abnormal inflammatory gastrointestinal tract that can affect any area in the gastrointestinal tract from the mouth to anus. Crohn's disease is one of the inflammatory bowel diseases (IBD) that most generally involve the ileocecal valve and the proximal colon. The cause of Crohn's disease is not known; however, new studies suggest that aberrant responses of the mucosal immune system might be the cause of continued inflammatory cascade as well as genetic predisposition and environmental exposures (Mazal, 2014). Commonly, Crohn's disease causes abdominal pain, diarrhea, weight loss and malnutrition. And also, it can be chronic, intermittent or in remission. (Smith & Hasir, 2014). In children, Crohn's disease causes delay in growth and physical development (Lopez, R., & Day, A., 2015). Individuals with Crohn's disease expect a period of disease that is unpredictable and remission and relapse symptoms are yet evidence to time. The goal of a child with Crohn's disease and as a healthcare provider is to understand the disease process and the treatment goals. It is very crucial for us to understand the pathophysiology of Crohn's disease, its etiology, and all the new findings of studies to provide appropriate and quality care. 

Pathophysiological Processes

Signs and Symptoms

- During flare-ups, patients with Crohn's disease experience following common intestinal-related clinical manifestations:
  - Crampy abdominal pain
  - Persistent Diarrhea
  - Rectal passage of blood, mucus or pus
  - Weight loss
  - Anemia
  - Fever
  - Night sweats
  - Fatigue
  - Loss of menstrual cycle

- In addition to gastrointestinal distress, 25% of individuals with Crohn's disease have the following extraintestinal signs and symptoms:
  - Arthritis
  - Primary sclerosing cholangitis
  - Enlarged liver and spleen
  - Nodular palpable subcutaneous masses
  - Livedo reticularis
  - Epidermal cysts
  - Venous and arterial thrombosis

- There are general initial features of the inflammatory process that are common to the development of inflammatory bowel disease.
- The activation of the body's immune system responds to commensal bacteria, migration of inflammatory cells from the vasculature system flow into the intestinal mucosa at the site of the inflammatory trigger.
- A multitude of aggressive metabolites and mediators accumulate in the mucosal tissue, resulting in tissue damage
- Such metabolites include nitric oxide, oxygen radicals, prostaglandins, interleukins, and histamines, all released at the site of inflammation and subsequently promoting fibroblast growth, collagen secretion, and varying degrees of lymphatic vessel damage.
- The local inflammatory infiltration of neutrophils into the intestinal mucosa and adjacent lymphatic vessels, where lymphatic aggregates called Peyer patches, usually found in the small intestine, also known as mesenteric lymph nodes.
- Neutrophils infiltrate the intestinal crypts (in the glands of the intestine) and express pattern recognition receptors 
- If the inflammation is not suppressed, the inflamed crypt cells are inappropriately activated.
- Skip lesions which are the abrupt transition between the unaffected and the infected tissue and characteristic more specific to Crohn's disease can develop throughout the diseased segments of bowel, with some segments being affected but not others (Mazal, 2014, p. 300-301)

Implications for Nursing Care

- The goal in Crohn's disease is maintaining its signs and symptoms and maintaining clinical remission. Nurses play a great role in managing the signs and symptoms of Crohn's disease for their patients by first gaining knowledge about the pathophysiological disease process and the overall effect it has on patients with Crohn's disease. Nurses need to provide education to their patients on medication adherence and lifestyle changes that include dietary modification and smoking cessation. It is very important to encourage patients to modify their diets and learn which foods and beverages can make the signs and symptoms of Crohn's disease improve. Nurses should encourage their patients with Crohn's disease to eat foods that provide the necessary nutrients and products and food high in fat and to avoid foods that cannot get extracted from their body (Hasley & Gibson, 2017). Nurses should be knowledgeable about complementary and alternative medicines that are proved to be beneficial in treating crohn's disease. According to Mazal (2017), probiotics, botanical extracts and acupuncture are used as alternatives therapies to treat Crohn's disease.

Conclusion

- Crohn's disease is a chronic non-curable and unpredictable autoimmune disease that affects any parts of the gastrointestinal tract. It causes irreparable strictures and abscess formation that may further lead to complications such as stenotic bowel lumen, bowel obstruction and cancer. According to Agorastos, et al., knowledge of the immunology, the malfunction of the mucosal immune system is responsible for the uncontrollable or uncontrolled inflammatory response in the disease. However, recent advancements in genetic predisposition, environmental exposure, gut microbiota and the complex microbial ecosystem and pathogenic microorganisms that are critical for proper gastrointestinal function may play a role in triggering the inflammatory pathway. Health care professionals, patients with Crohn's disease and family members need to understand the pathophysiology of crohn's disease in order to manage it effectively (Mazal, 2014).

References


Significance of Pathophysiology

- It’s very essential to understand the pathophysiology of Crohn’s disease in order to provide effective and holistic care. Health care providers need to know the disease process to have optimal treatment plan, disease progression and complications and quality of life for patients with crohn’s disease. Patients and their family also need to understand the pathophysiological process of the disease so that they can understand the effect of their treatment; it’s side effects and the long term goal of the plan of care. Focusing on understanding the pathophysiological process by the healthcare providers and the patients makes the management of crohn’s disease achievable.