Diagnosis and Management of Ulcerative Colitis

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Keywords: Ulcerative colitis, inflammatory bowel disease, ulcerative colitis diagnosis, infection, immunosuppressant

Abstract: Ulcerative colitis is one part of inflammatory bowel disease and a chronic illness characterized by diffuse inflammation in the colonic mucosa. Ulcerative colitis is also influenced by lifestyle such as smoking, a diet high in sugar and fat, drug use, and stress. Genetic factors also have a role in ulcerative colitis. This study aimed to review the diagnosis and management of ulcerative colitis. The pathogenesis of inflammatory bowel disease is a result of continuous antigen stimulation by commensal enteric bacteria, fungi and viruses causing chronic inflammation in hosts with a genetic disorder and defects in mucosal barrier function as well as immunoregulation. The main clinical symptoms of ulcerative colitis are diarrhea with blood and mucus and abdominal pain. The diagnosis of ulcerative colitis is established based on typical clinical symptoms, stool examination, colonoscopy, and biopsy checks. These steps are performed to confirm the presence of colitis and to exclude infection. A typical endoscopic and histological outcome with negative outcomes from evaluation for infectious diseases will support the diagnosis of ulcerative colitis. Treatment of ulcerative colitis should be adjusted to the severity of the disease, divided into therapeutics for maintenance and therapy for remission. The goal of therapy is to induce and maintain remission conditions to improve patients' quality of life, reduce long-term steroid requirements and minimize cancer risk. Patients' prognosis is generally quite good despite the often-deteriorating quality of life.

1 INTRODUCTION

Ulcerative colitis is a chronic disease characterized by extensive inflammation of the colonic mucosa; 95% of the inflammatory process occurs in the rectum and may extend proximally and sustainably throughout the colon. The typical symptoms of this disease are diarrhea with blood and tenesmus. The clinical course of ulcerative colitis is characterized by the emergence of exacerbations that may appear spontaneously or in response to changes in therapy as well as the influence of other diseases (Kornbluth et al., 2010).

Ulcerative colitis is one of the most common inflammatory bowel diseases (IBDs). The incidence is approximately 20 cases among 100,000 population in America. The number of female and male sufferers are almost identical. They are more prevalent in North American and Northern European populations, while the least prevalence is found in Asian populations. Ulcerative colitis is also influenced by lifestyle such as smoking, a diet high in sugar and fat, drug use, and stress. Genetic factors also have a role in ulcerative colitis (Loftus, 2004).

The diagnosis of ulcerative colitis is based on typical clinical symptoms, stool examination, colonoscopy and biopsy checks. These steps are performed to confirm the presence of colitis and to exclude infection. A typical endoscopic and histological outcome with negative outcomes from evaluation for infectious diseases will support the diagnosis of ulcerative colitis. The goal of therapy is to induce and maintain a state of remission to improve patients' quality of life, reduce long-term steroid requirements and minimize cancer risk (Dignass et al., 2012).

In the last few decades, the number of patients increased in developing countries. Since this disease is a chronic disease affecting patients' quality of life, appropriate diagnosis and suitable therapy are key to the management of ulcerative colitis. This study is a literature review aiming to discuss the diagnosis and

Bramantya, R., Nusi, I., Setiawan, P., Purbayu, H., Sugihartono, T., Maimunah, U., Kholili, U., Widodo, B., Vidyani, A., Miftahussurur, M. and Thamrin, H.
Diagnosis and Management of Ulcerative Colitis.
In *Proceedings of Surabaya International Physiology Seminar (SIPS 2017)*, pages 405-412
ISBN: 978-989-758-340-7

management of ulcerative colitis.

2 PATHOPHYSIOLOGY

Until now the underlying pathophysiology of ulcerative colitis remains unknown. This disease is not caused by only one factor, but is multifactorial, i.e. genetic predisposing factor, environmental factor and immune response from patients. The influential genetic factors include family history, and in some studies it is said that 10-20% of patients have other family members suffering from the same disease (Danese S, 2011). One of the most influencing environmental factors is smoking. Many studies have suggested that ulcerative colitis is more common in nonsmokers than smokers (Danese S, 2011; Osterman MT, 2010).

Another pathogenesis of inflammatory bowel disease is a result of continuous antigen stimulation by commensal enteric bacteria, fungi and viruses causing chronic inflammation in hosts with genetic disorders and defects in mucosal barrier function as well as immunoregulation (Osterman MT 2010). The colon has the largest number and type of bacteria than any other organ. In normal circumstances, the immune system in the digestive tract has a tolerant nature for microbes. But in ulcerative colitis, there is a loss of tolerance so that the immune system responds excessively. Homeostasis is influenced by Toll-like receptors (TLR) and nucleotide binding oligomerization domain (NOD)-like receptors on epithelial and immune cells. Recognition by these receptors leads to tolerance, but in the state of dysregulation, the reaction that arises is the inflammatory process (Osterman MT, 2010; Danese S, 2011).

3 CLASSIFICATION

There are several reasons why patients with ulcerative colitis are classified according to the extent of the disease. First, the extent of inflammation will affect the management of the patient and the choice of form of therapy to be administered. There are several reasons why patients with ulcerative colitis are classified according to the extent of the disease. First, the extent of inflammation will affect the management of the patient and the choice of form of therapy to be administered. For example, topical therapy in the form of suppositories may be used for proctitis, and an enema is used for left-sided colitis, but for extensive colitis the main therapeutic option is a combination of topical and oral medications (Kornbluth et al., 2010).

Second, as the early stage of surveillance, a study in Sweden found that extensive inflammation is one of the risk factors for the development of colorectal cancer. In limited proctitis in the rectum, there is no increased risk, but left-sided and extensive colitis have an increased risk of becoming a cancer. Therefore, in patients with widespread colonic inflammation it is recommended to undergo periodic colonoscopy for surveillance (Dignass et al., 2012). The Montreal Classification of Ulcerative Colitis is divided into three types depending on the location of the inflammation. Table 1 shows the Montreal classification for ulcerative colitis.

Table 1: The Montreal Classification for Ulcerative Colitis (Dignass et al., 2012)

E1	Proctitis	Involvement is limited to the rectum
E2	Left side	Involvement begins in the colon and descends until the early transversum
E3	Extensive	Involvement is from all the colon to cecum (pancolitis)

In some patients, inflammation from the terminal ileum may occur, namely backwash ileitis. This makes diagnosis more difficult, especially to distinguish it from Crohn's disease (Crohn ileocolitis). The degree of severity of ulcerative colitis should also receive attention because it will determine the treatment performed. The commonly used index is Truelove and Witts (Osterman MT, 2010). Table 2 shows the Truelove and Witts index.

Table 2: Truelove and Witts Index (Osterman MT, 2010)

	Remission	Mild	Moderate	Severe
Bloody stools/ day	Asymptomatic	<4	>4	>6
Pulse	<90x/m	<90x/m	<90x/m	>90x/m
Temperature	<37.5 C	<37.5 C	<37.8 C	>37.8 C
Hb	>11.5	>11.5	> 10.5	<10.5
CRP	Normal	Normal	>30	>30

4 DIAGNOSIS

4.1 Clinical Symptoms

The main clinical symptoms of ulcerative colitis are diarrhea with blood and mucus as well as abdominal pain. The symptoms that appear do not necessarily reflect the severity of the disease. Active disease can be seen in sigmoidoscopy in asymptomatic patients. Symptoms usually appear a few weeks or months before the patient's treatment. This is the characteristic of this disease. Another frequently found symptom is a history of episodes of intermittent diarrhea with mild bleeding. This causes the patient not to immediately seek medical help (Osterman MT, 2010).

4.1.1 Rectal Bleeding

Patients with hemorrhagic proctitis (due to inflammation confined to the rectum) usually present with fresh-out blood complaints either during bowel movements or not. This symptom is often regarded as hemorrhoid hemorrhage, but in patients with proctitis a blood-mixed mucus is often found. If the disease concerns the area above the rectum, then the blood will be mixed with feces or diarrhea with considerable bleeding. In severe disease, the presentation of symptoms that appear is the discharge of liquid feces mixed with blood and pus. Active colitis is usually always accompanied by macroscopic bleeding. If no blood is present, then the diagnosis needs to be questioned as to whether the patient is suffering from Crohn's Disease. Another possibility is the patient did not see the shape of the stool or did not know if blood came out, especially if there is a change of color (Osterman MT, 2010).

4.1.2 Diarrhea

Diarrhea is not always found in patients with ulcerative colitis. For example, patients with proctitis or proctosigmoiditis may complain of constipation or hard feces. However, most patients with active disease complain of diarrhea. Urgency or defecation after bowel movements are commonly found especially if inflammation occurs in the rectum. The pathophysiology of diarrhea involves several mechanisms, but failure to absorb salt and water is the major factor. The motility of the colon will change as a result of inflammation resulting in a rapid transit time through the affected part of the colon (Osterman MT, 2010).

4.1.3 Abdominal Pain

In most patients with ulcerative colitis, abdominal pain is not a major complaint. Some patients with active disease may experience mild pain in the lower abdominal area, left iliac fossa or central abdominal area. Severe pain can occur in severe acute attacks. The cause of the pain is unclear but may be associated with increased pressure on the inflamed colonic walls during muscle contraction (Osterman MT, 2010).

4.1.4 Other Symptoms

Diseases with moderate to severe activity levels often cause systemic symptoms. Patients may experience anorexia, nausea and vomiting. These symptoms, followed by loss of protein through inflamed mucosa, hypercatabolism and downregulation of albumin synthesis lead to weight loss and hypoalbumin. Fever, another catabolic factor, is commonly found in severe attacks. Patients may also complain of anemia symptoms, such as tightness, knee swelling and body weakness. Anemia is usually caused by bleeding, but bone marrow suppression due to chronic inflammation and the influence of drugs (Sulfasalazine, Azathioprine) still needs to be considered (Osterman MT, 2010).

4.2 Physical Examination

Patients with moderate to severe illness only exhibit some abnormalities on physical examination. Usually the patient still looks healthy without any signs of anemia or chronic pain. Weight should always be noted, and in patients who are children and adolescents, height and weight should be adjusted to the growth rate. The inflammatory part of the colon may be painful on palpation whereas bowel sound is normal. On digital rectal examination, the rectum appears normal, but the mucosa feels like velvet and edematous also the patient feel pain. There was blood on the examiner’s fingertip. Perianal lesions are rare, unlike in Crohn's disease (Longo DL, 2012).

In patients with severe ulcerative colitis, it often appears weak with weight loss and lack of fluids and electrolytes. There are clinical signs of anemia and fever. The abdomen is distended with colonic pain and decreased bowel sounds. Extra intestinal manifestations are often found as well (Longo DL, 2012).

4.3 Laboratory Examination

Laboratory data are needed for several reasons, the first reason being to find the existence of hematological abnormalities and the second reason to assist in monitoring disease activity. Active ulcerative colitis is usually associated with elevated levels of CRP (C-reactive protein), platelet count, LED and decreased hemoglobin and albumin serum. Leukocytosis can also be found, but since white blood cells also increase in glucocorticoid therapy, this is not an appropriate sign for disease activity. In patients iron deficiency is often found due to chronic bleeding, and it can worsen in acute attacks. Thus, hypochrome micrositic anemia is commonly found. Serum iron and total iron binding capacity must be regularly checked. Increased serum transaminase can also be found in severe disease, but it will improve if there is remission (Dignass et al., 2012).

Some antibodies are said to have diagnostic value in patients with ulcerative colitis, including atypical perinuclear antineutrophil cytoplasmic antibodies (pANCAs) and anti-Saccharomyces cerevisiae antibodies (ASCA). Positive pANCA serology is present in 50-60% of patients, but variation occurs due to methodological differences. A combination of ASCA and pANCA examinations can be used to distinguish between ulcerative colitis and Crohn's disease. Positive ASAN and ASCA assays show a sensitivity of 57% and a specificity of 97% for ulcerative colitis, whereas positive pancreatic and ASCA show 49% sensitivity and 97% specificity for Crohn's disease. In general, pANCA and ASCA demonstrate good specificity for distinguishing ulcerative colitis and Crohn's disease but its sensitivity has not been too high to corroborate its use as a diagnostic tool (Dignass et al., 2012).

On stool examination, patients with ulcerative colitis show the presence of many pus cells, red blood cells and eosinophils. Routine culture should be performed to exclude Salmonella and Shigella infections. Some other cultures that can be examined are Campylobacter spp, Clostridium difficile and Yersinia spp. Examination for the presence of amoeba is also done by Sero Amoeba and culture. In patients suspected of being immunocompromised, the possibility of opportunistic infections should be investigated. If symptoms are found with severe abdominal pain and heavy bleeding, E. coli infection needs to be considered (Dignass et al., 2012).

4.4 Radiological Examination

Patients with severe ulcerative colitis require plain abdominal rontgen images. Signs that can be found include thickening of the walls of the colon and prognostic signs such as mucosal islands, small bowel distension and colon dilatation may also appear. Plain abdominal images are also useful for detecting fecal material. Inflamed colonies rarely contain feces, but in patients with left-sided disease, constipation can be found (Longo DL, 2012).

Another examination that can be done is a double contrast barium enema. There are lead pipe phenomena, the presence of fine granulation along the colon, the irregularity of mucosa and ulcers, both superficial and deep. The folds of colonic haustra may disappear in severe disease. CT scan does not help much in establishing the diagnosis of ulcerative colitis (Osterman MT, 2010).

4.5 Endoscopy

Colonic mucosal changes in endoscopic examination usually begin from the anal region and continue proximally in a continuous and concentric way. The boundary between inflammatory and normal areas is evident and can arise at a few millimeters apart, especially in distal diseases. Many variations may arise in the endoscopic examination and therefore some indices for the assessment of ulcerative colitis include Baron, Powell-Tuck and Sutherland (Annese et al., 2013).

The main function of the index or Baron score is to determine the activity of ulcerative colitis disease experienced by the patient and to assess the final outcome of the therapy given (Table 3).

Table 3: Baron Index (Annese et al., 2013)

Score	
0	Normal mucosa, ramifying vascular pattern clearly visible, no spontaneous bleeding, no bleeding to light touch
1	Abnormal, but non hemorrhagic: appearances between 0 and 2
2	Moderately hemorrhagic: bleeding to light touch, but no spontaneous bleeding seen ahead of the instrument on initial inspection
3	Severely hemorrhagic: spontaneous bleeding seen ahead of instrument on initial inspection and bleeds to light touch

The early signs of ulcerative colitis are loss of vascular pattern accompanied by hyperemia and mucosal edema. In a more serious inflammation,

mucosal granulation develops, the fragility of which can be detected by the appearance of bleeding if the mucosa is swept away. Severe ulcerative colitis is characterized by mucosal spontaneous bleeding and the presence of ulcers. In contrast to Crohn's disease, ulcers of ulcerative ulcers are almost always confined to inflamed mucosa. If a deep ulcer is found then it signifies a poor prognosis. In chronic diseases, mucosal atrophy occurs so that the folds of the haustra disappear, the lumen narrows and pseudopolyps develop (Annese et al., 2013).

4.6 Histopathology

In ulcerative colitis, there are two major histologic features that support the chronic process and help to differentiate the disease from inflammation due to infection and self-limited colitis. The first histologic feature is the disturbed cryptographic architecture of the colon, appearing split and the number decreasing, often accompanied by a gap between the cryptic base and the muscular mucosa. In the second feature, some patients have basal plasma cells and multiple basal lymphoid cell aggregations. There can be congestion in the vascular mucosa with edema and focal bleeding, as well as infiltration of inflammatory cells such as neutrophils, lymphocytes, plasma cells and macrophages. Neutrophils invade the epithelium, usually on the crypt, resulting in cryptitis and eventually lead to crypt abscesses (Osterman MT, 2010).

4.7 Differential Diagnosis

Differential main diagnosis of ulcerative colitis is Crohn's disease because both are classified as Inflammatory Bowel Disease. Table 4 below shows their differences (Longo DL, 2012).

Table 4: Differences between ulcerative colitis and Chron's Disease (Longo DL, 2012)

	Ulcerative Colitis	Crohn's disease
CLINICAL		
Blood in feces	Yes	Sometimes
Mucus	Yes	Sometimes
Systemic symptoms	Sometimes	Often
Abdominal pain	Sometimes	Often
Abdominal mass	Rare	Yes
Perineal impairment	No	Often
Fistula	No	Yes
Small bowel obstruction	No	Often
Colon obstruction	Rare	Often
Responses to antibiotics	No	Yes
Post-surgery recurrence	No	Yes
Positive ANCA	Often	Rare
Positive ASCA	Rare	Often
ENDOSCOPY		
Rectal sparing	Rare	Often
Continuous disease	Yes	Sometimes
Cobblestoning	No	Yes
Granuloma on biopsy	No	Sometimes
RADIOGRAPHY		
Small bowel abnormality	No	Yes
Terminal ileum abnormality	No	Yes
Segmental colitis	No	Yes
Asymmetric colitis	No	Yes
Stricturing	Sometimes	Rare

In addition to Crohn's disease, there are other causes of intestinal infectious diseases, especially those caused by Salmonella spp organisms, Shigella spp, Campylobacter spp, Clostridium difficile, E. Coli, and opportunistic infections in immunocompromised patients such as Cytomegalovirus. When viewed from the main symptoms of diarrhea mixed with blood, ulcerative colitis needs to be distinguished from irritable bowel syndrome, colon or polyp carcinoma, rectal ulcer, and diverticular disease (Longo DL, 2012).

5 COMPLICATIONS

Some complications that can arise from ulcerative colitis are massive bleeding (1%) especially in acute attacks and the appearance of a toxic megacolon dilated above 6 cm in the colon (5%). Another complication is the occurrence of colonic stricture (5-10%) (Longo DL, 2012).

6 MANAGEMENT

To determine an appropriate treatment strategy, it is necessary to consider several factors such as disease activity, distribution (proctitis, left-sided, extensive) and disease patterns. Disease patterns include frequency of relapse, how long the disease has run, response to previous treatment, drug side-effects and extra-intestinal manifestations (Dignass

et al., 2012). The goals of treatment are induction and maintenance of symptomatic remission to improve the patient's quality of life, reduce dependence on long-term steroids, and minimize cancer risk (Kornbluth et al., 2010).

6.1 Aminosalisilate

Sulfasalazine was originally used for the treatment of rheumatoid arthritis but was later found to be effective for ulcerative colitis. Sulfasalazine is effective for mild to moderate colitis, but for the treatment of severe active disease is not very good when compared with glucocorticoids, the main effect of which is to maintain remission after active inflammation has subsided. The given dose is 2-4 grams / day for maintenance and 3-6 grams / day for acute disorders. It is important to note that the incidence of side-effects of this drug is quite high such as nausea, vomiting, anorexia, headaches, skin hypersensitivity, agranulocytosis, hepatitis, infertility, and inhibited folate acid absorption. Sulfasalazine is considered safe for use in pregnant women provided with adequate preparation of folic acid of about 800 micrograms. Currently, several drugs have been developed with new formulations such as Olsalazine and Balsalazide as well as new forms of Sulfasalazine with delayed/extended release which have similar efficacy with fewer side-effects (Kozuch and Hanauer, 2008).

6.2 Glucocorticoids

The use of glucocorticoids for ulcerative colitis was initially performed by Truelove and Witts. Their study found that most patients experience improvement and remission when compared with placebo. An indication of steroid administration is when there is moderate ulcerative colitis or severe flares. The dose used is 20-60 mg oral prednisone and for severe attacks can be given intravenously. The dose used is 20-60 mg of prednisone orally and for severe attacks can be given intravenously at 40-60 mg / day with 40-60 mg/day of methylprednisolone. This intravenous therapy is usually given for 7-10 days. Glucocorticoids may also be given topically for distal diseases. It is important to note that glucocorticoids are not effective in maintaining remission and have many side-effects that are used only for active disease alone. Currently, some other steroids such as betamethasone, beclomethasone and prednisone metasulfobenzoate have a small systemic bioavailability which can reduce the side-effects (Danese S, 2011).

6.3 Immunosuppressants

The most commonly used immunosuppressants are Azathioprine and 6-mercaptopurine. The main uses of these drugs are for the management of chronic active disease and remission maintenance, especially for relapsed patients after glucocorticoid administration is discontinued. The dose used is 2-2.5 mg / kg of Azathioprine with minimum side-effects. Cyclosporine is often used for severe ulcerative colitis at a dose of 4 mg / kg and has been demonstrated to be effective in studies compared with placebo. Approximately 50-80% of patients who do not respond to intravenous glucocorticoids will improve with Cyclosporine administration. It is important to note that the toxicity effect of Cyclosporine is high and thus laboratory tests should be done periodically, especially on renal and liver function (Triantafilidis JK, 2011).

6.4 Other Drugs

Antibiotics usually have no place in the management of ulcerative colitis unless there are specific indications such as a positive culture or complications such as perforation. Methotrexate has not shown satisfactory results in several studies for both remission induction and disease maintenance. Infliximab, an anti-TNF, shows good efficacy for the treatment of moderate to severe ulcerative colitis, supported by data from ACT 1 and 2 studies. About two-thirds of patients show a good clinical response, one-third reaching long-term remission and 22% become free of steroids. Therefore, Infliximab is now part of standard ulcerative colitis therapy (Rutgeerts et al., 2005).

6.5 Therapeutic Algorithm

For patients with mild to moderate ulcerative colitis, aminosalicylate is still a major therapy for both active disease and remission maintenance. Patients may be given high doses up to the tolerance limit before transferring to systemic steroids. Patients with distal and left-sided disease, topical aminosalisilate and topical glucocorticoids in enema form may be administered together with oral medication. Patients with moderate to severe disease should receive immediate steroid treatment. The goal is to prevent the progress of the disease, emergence of severe and fulminant diseases, to reduce inflammatory activity, and achieve remission.

The dosage of 40 mg / day for prednisone is then tapered up to a dose of 20 mg / day to a dose of 2.5 mg / day for 4 weeks and the symptoms subside (Dignass et al., 2012).

Patients with severe acute or fulminant illness should receive hospitalization. Clinical assessment is imminent and vigilance of complications, especially toxic megacolon, is necessary. There is no place for colonoscopy or barium enema examination in acute circumstances. Immediate surgical consultation is required for surgery. Substitution of fluid and electrolytes should be done immediately and intravenous steroids such as Hydrocortisone 100 mg / 6 hours or Methylprednisolone 16 mg / 6 hours along are needed with topical glucocorticoid treatment 2 times per day on lesions in the rectum. Patients with poor nutritional status may need parenteral nutrition although oral administration is said to have no effect on treatment outcomes. This treatment is continued for 5-7 days until the patient's condition improves. A good response is indicated by the patient feeling more comfortable, no fever or tachycardia, no abdominal palpation pain and reduced diarrhea frequencies below 4x/day. Patients can then be given oral prednisone (40 mg/kg day) as well as Aminosalisilat and a mild diet. Diets can be administered in smaller portions 4-5 times a day and feeding with high-fiber content such as whole grain bread, dried fruits and nuts should be avoided as it may aggravate diarrhea. Other types of foods that should be reduced are high-fat foods and milk containing lactose (Osterman MT, 2010).

Patients who do not respond to intravenous steroid therapy or their condition worsens require aggressive therapy and surgery. Prognosis is characterized by diarrhea >9x/day, tachycardia > 100xmin, fever >38 degrees Celsius, serum albumin < 3 mg/dl, persistent abdominal pain, and presence of colon dilatation (Osterman MT, 2010).

Another treatment is intravenous Cyclosporine dosed at 2-4 mg/kg/day. A response is expected to occur within 3-4 days and should be monitored for side-effects due to high toxicity of Cyclosporine. If after aggressive therapy the patient does not show improvement then a colectomy operation becomes an option (Danese S, 2011).

After remission is achieved, the patient receives maintenance therapy with the main drug Aminosalisilat as well as both Sulfasalazine and other mesalamine preparations such as Olsalazine and Balsalazide. This treatment is done for life. Steroids can be given if symptoms appear more severe but not as long-term drugs. Another alternative drug is Azathioprine or 6-mercaptopurine especially for patients who do not respond to aminosalisilate and steroids. Cyclosporine is effective for severe colitis but is not recommended for long-term therapy because of its toxic effects (Kozuch and Hanauer, 2008).

6.6 Operation Procedure

There are several indications for the operation of colectomy: emergency colectomy is performed on ulcerative colitis that has acute fulminant or toxic megacolon acute attacks that do not improve with medical therapy; in chronic ulcerative colitis disease there is poor patient quality of life despite optimal therapy. It is also performed when the signs of dysplasia or carcinoma are found. Operations performed include Brook ileostomy, Kock pouch and most often now, ileoanal anastomosis (Biondi et al., 2012).

7 COMPLCATIONS

In the course of this disease, there can be several complications, including perforation of the intestine involved, the occurrence of intestinal stenosis due to fibrosis, toxic megacolon, bleeding and the occurrence of colorectal cancer (Djojoningrat, 2009). Extraintestinal manifestations are commonly found in patients with ulcerative colitis and will usually improve if there is a remission of inflammation in the colon (Osterman MT, 2010).

In the skin there are erythema nodosum (2-4%) due to Sulfasalazine and Pyoderma Gangrenosum (1-2%). In the mouth there can be aphthous ulcers (10%), and in the eyes Episcleritis or Anterior Uveitis (5-8%). In the joints there can be acute arthropathy (5-10%) and on the liver there is often found increased serum transaminase. The severe complication of the liver is primary sclerosing cholangitis (3%).

8 PROGNOSIS

Most patients will experience repeated intermittent attacks, but the remission period varies from a few weeks to several years. Approximately 90% of patients can move as usual despite the decrease in quality of life, but about 10-15% of the natural chronic symptoms are sustained and the rest suffer severe acute attacks that may require colectomy (Osterman MT, 2010).

9 CONCLUSION

Ulcerative colitis is a part of Inflammatory Bowel Disease and is a chronic disease characterized by diffuse inflammation of the mucosa in the colon. Diagnosis can be established by anamnesis, physical examination and laboratory tests; the main investigation is endoscopy. Treatment of ulcerative colitis should be adjusted to the severity of the disease, divided into therapeutics for maintenance and therapy for remission. Drugs used include among others Aminosalisilat, Glucocorticoids and other immunosuppressants such as Cyclosporine. The patient's prognosis is generally quite good despite their quality of life often deteriorating.

REFERENCES

ANNESE, V., DAPERNO, M., RUTTER, M. D., AMIOT, A., BOSSUYT, P., EAST, J., FERRANTE, M., GOTZ, M., KATSANOS, K. H., KIESSLICH, R., ORDAS, I., REPICI, A., ROSA, B., SEBASTIAN, S., KUCHARZIK, T., ELIAKIM, R., EUROPEAN, C. S. & COLITIS, O. 2013. European evidence based consensus for endoscopy in inflammatory bowel disease. *J Crohns Colitis,* 7**,** 982-1018.

BIONDI, A., ZOCCALI, M., COSTA, S., TROCI, A., CONTESSINI-AVESANI, E. & FICHERA, A. 2012. Surgical treatment of ulcerative colitis in the biologic therapy era. *World J Gastroenterol,* 18**,** 1861-70.

DANESE S, F. C. 2011. Medical Progress Ulcerative Colitis. *New England Journal Medicine,* 365**,** 1713-1725.

DIGNASS, A., ELIAKIM, R., MAGRO, F., MAASER, C., CHOWERS, Y., GEBOES, K., MANTZARIS, G., REINISCH, W., COLOMBEL, J. F., VERMEIRE, S., TRAVIS, S., LINDSAY, J. O. & VAN ASSCHE, G. 2012. Second European evidence-based consensus on the diagnosis and management of ulcerative colitis part 1: definitions and diagnosis. *J Crohns Colitis,* 647**,** 1-26.

DJOJONINGRAT, D. 2009. *Inflammatory Bowel Disease : Alur diagnosis dan pengobatannya di Indonesia,* Jakarta Interna Publishing.

KORNBLUTH, A., SACHAR, D. B. & PRACTICE PARAMETERS COMMITTEE OF THE AMERICAN COLLEGE OF, G. 2010. Ulcerative colitis practice guidelines in adults: American College Of Gastroenterology, Practice Parameters Committee. *Am J Gastroenterol,* 105**,** 501-23; quiz 524.

KOZUCH, P. L. & HANAUER, S. B. 2008. Treatment of inflammatory bowel disease: a review of medical therapy. *World J Gastroenterol,* 14**,** 354-77.

LOFTUS, E. V., JR. 2004. Clinical epidemiology of inflammatory bowel disease: Incidence, prevalence, and environmental influences. *Gastroenterology,* 126**,** 1504-17.

LONGO DL, K. D., JAMESON JL. 2012. *Harrison`s Principles of Internal Medicine 18th edition,* New York, McGraw-Hill Medical Publishing Division.

OSTERMAN MT, L. G. 2010. *Sleisinger's and Fordtrans's Gastrointestinal and Liver Disease 9th edition,* Philadelphia, Saunders Elsevier.

RUTGEERTS, P., SANDBORN, W. J., FEAGAN, B. G., REINISCH, W., OLSON, A., JOHANNS, J., TRAVERS, S., RACHMILEWITZ, D., HANAUER, S. B., LICHTENSTEIN, G. R., DE VILLIERS, W. J., PRESENT, D., SANDS, B. E. & COLOMBEL, J. F. 2005. Infliximab for induction and maintenance therapy for ulcerative colitis. *N Engl J Med,* 353**,** 2462-76.

TRIANTAFILIDIS JK, M. E., GEORGOPOULOS F. 2011. Current and emerging drugs for the treatment of inflammatory bowel disease. *Drug Design, Development and Therapy,* 5**,** 185–210.