

# The Prevalence, Profile, and Risk Factor of Patients with Ulcerative Colitis at Dr. Saiful Anwar Malang General Hospital

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## ABSTRACT

**Background:** The prevalence ulcerative colitis (UC) in RSCM Jakarta in 1991-1995 is 2.5%. The disease affects men and women at similar rates or slightly more common in women than in men. Age of onset follows a bimodal pattern, with a peak at 15-25 years and a smaller one at 55-65 years, although the disease can occur in people of any age. The precise etiology of UC is not well understood. UC is precipitated by a complex interaction of environmental (cigarettes, diet, non-steroidal anti-inflammatory drug/NSAID, etc), genetic, and immunoregulatory factors. This study aimed to identify the prevalence, profile and risk factor of ulcerative colitis in Dr. Saiful Anwar General Hospital Malang.

**Method:** This is a retrospective survey analysis from medical record which was taken from 2170 patients who underwent colonoscopy in Dr. Saiful Anwar General Hospital Malang from January 2010 to December 2014. Demographic setting (sex, age), clinical features, lifestyle, diagnosis based on colonoscopy were analyzed as the variables.

**Results:** Total patients with UC was 176 patients. The prevalence of UC during 2010-2014 was 8.2% at Dr. Saiful Anwar General Hospital. There was a similar prevalence of sex between male and female patients, in which 95 (53.4%) were male and 81 (46.6%) were female. The average age of patients with UC was 41,6 years. Most patients were presented with abdominal pain (32.90%) and weight loss (42.1%). The diagnosis based on colonoscopy were pancolitis (36%), proctosigmoiditis/proctitis (31.81%), and left-sided colitis (21.9%). The risk factors of UC identified in this study were current smoker; use of NSAIDs/traditional herbs/potion and fiber diet. Majority of ulcerative colitis study samples were non-smoker (75%), not consuming herbal treatment/NSAID (60.22%), and rarely consuming fiber (36.93%). There is a significant correlation between frequency of fiber diet and UC ( $r = -0.106, p = 0.000$ ).

**Conclusion:** The prevalence of UC was 8.2% in our hospital with men and women were equally affected, and average age was 41.6 years. Patients presented with various clinical symptoms, most are abdominal pain and weight loss. The most frequent diagnosis were pancolitis, proctosigmoiditis/proctitis, and leftside colitis. There is a significant correlation between frequency of fiber diet and UC ( $r = -0.106, p = 0.000$ ).

**Keywords :** ulcerative colitis, prevalence, profile, risk factors

## ABSTRAK

**Latar Belakang:** Prevalensi kolitis ulseratif (KU) di Rumah Sakit Cipto Mangunkusumo, Jakarta pada 1991-1995 mencapai 2,5%. Kejadian penyakit ini pada laki-laki maupun perempuan pada umumnya berimbang, atau

terkadang sedikit lebih banyak pada perempuan. Pola usia penderita penyakit ini bimoda, dengan puncak pada rentang usia 15-25 tahun dan 55-65 tahun, meskipun dapat terjadi pada berbagai kalangan usia. Etiologi pasti dari KU tidak diketahui secara pasti. KU erat kaitannya dengan interaksi lingkungan (merokok, pola makan, penggunaan OAINS), genetic, dan faktor imunoregulator. Studi ini bertujuan untuk mengidentifikasi prevalensi, rprofil, serta faktor risiko dari kolitis ulseratif di Rumah Sakit Dr. Saiful Anwar, Malang.

**Metode:** Penelitian ini adalah uji analisis survei retrospektif menggunakan rekam medis dari 2170 pasien yang menjalani kolonoskopi di Rumah Sakit Dr. Saiful Anwar, Malang, sejak Januari 2010 hingga Desember 2014. Variabel yang dianalisis adalah kondisi demografi (usia, jenis kelamin), gambaran klinis, gaya hidup, serta diagnosis berdasarkan prosedur kolonoskopi.

**Hasil:** Total pasien yang mengalami KU adalah 176 pasien. Prevalensi KU sepanjang 2010-2014 adalah 8,2% di Rumah Sakit Dr. Saiful Anwar, Malang. Ada kesamaan prevalensi pada laki-laki dan perempuan, yakni 95 pasien (53,4%) dan 81 pasien (46,6%) secara berurutan. Rerata usia pasien dengan KU adalah 41,6 tahun. Sebagian besar pasien mengalami gejala nyeri abdomen (32,90%) dan penurunan berat badan (42,1%). Diagnosis berdasarkan pemeriksaan kolonoskopi adalah pankolitis (36%), proktosigmoiditis/proktitis (31,81%), dan kolitis sisi kiri (21,9%). Faktor risiko KU yang berhasil diidentifikasi pada penelitian ini adalah merokok, penggunaan OAINS/obat tradisional, diet berserat. Mayoritas penderita KU pada penelitian ini adalah bukan perokok (75%) tidak menggunakan OAINS/obat tradisional (60,22%), dan jarang mengonsumsi serat (36,93%). Terdapat korelasi signifikan antara frekuensi konsumsi serat dengan KU ( $r = -0,106$ ;  $p = 0.000$ ).

**Simpulan:** Prevalensi KU adalah 8,2% pada rumah sakit kami, dengan persebaran yang seimbang antara laki-laki dan perempuan, dan usia rerata 41,6 tahun. Pasien memiliki berbagai gejala klinis, tersering adalah nyeri abdomen dan berat badan turun. Diagnosis yang paling sering dijumpai adalah pankolitis, proktosigmoiditis/proktitis, dan kolitis sisi kiri. Terdapat korelasi signifikan antara konsumsi serat dengan KU ( $r = -0,206$ ;  $p = 0.000$ ).

**Kata kunci:** kolitis ulseratif, prevalensi, profil, faktor risiko

## INTRODUCTION

Ulcerative colitis (UC) is considered frequent in majority of European and North American population but at the end of the decade of the 90s and into the 21<sup>st</sup> century, there is a tendency of increasing incidence in the Asia-Pacific region.<sup>6</sup> The prevalence ulcerative colitis in Dr. Cipto Mangunkusumo Hospital Jakarta in 1991-1995 is 2.5%.<sup>1</sup> The disease affects men and women at similar rates or slightly more common in women than in men. Age of onset follows a bimodal pattern, with a peak at 15-25 years and a smaller one at 55-65 years, although the disease can occur in people of any age.<sup>6</sup>

Based on the study of Olmsted, the average age of patients diagnosed with UC age of 34.9 years.<sup>13</sup> The precise etiology of UC is not well understood. It is generally estimated that the pathogenesis of UC preceded by an infection, toxins, diet product or intraluminal colonic bacteria, which occur in susceptible individuals and is influenced by genetic factors, immune defects, the environment (cigarettes, diet, NSAID, etc), resulting in a cascade of inflammation in the intestinal wall.<sup>1</sup> The aim of this study is to identify the prevalence, profile and risk factor of ulcerative colitis in Dr. Saiful Anwar General Hospital Malang.

## METHOD

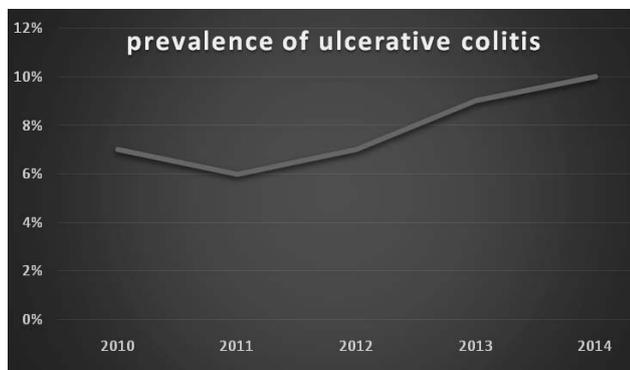
We collect medical records from January 2010 to December 2014, all patients who underwent for colonoscopy at Dr. Saiful Anwar General Hospital Malang include in this study. Diagnosed of ulcerative colitis was from colonoscopy. To assess prevalence, risk factors and the profile of patients with ulcerative colitis, the following data were recorded for each subject: age, gender, clinical feature (type of defecation, abdominal pain, decrease of body weight, conjunctiva anemic), disease location, consumption of traditional herbs/NSAID, smoking status and fiber diet. All variables were categorized for data analyses.

This study was retrospective survey analysis. The  $\chi^2$  test was employed to investigate the relationships between the rate of UC and clinical characteristics. These variables included the following: gender (male or female); age (17- 25, 26-35, 36-45, 46-55, 56-65, > 65 years); decrease of body weight (yes or no), conjunctiva anemic (yes or no), abdominal pain (yes or no), chronic diarrhea (yes or no), bloody stool (yes or no), stool with mucous (yes or no), bloody stool with mucous (yes or no), constipation (yes or no), NSAID/traditional herbs use (yes or no); smoking status

(yes or no); fiber diet (No, 4-6 x/week, 1-3 x/week, everyday), location of UC from colonoscopy. P value less than 0.05 was considered significant. The variable that had a significant result analyzed for a correlation relationship, outcome as r and p value less than 0.05 was considered significant. The inclusion criteria was all medical records of patients diagnosed with ulcerative colitis by colonoscopy results. The exclusion criterion was medical records with incomplete data.

**RESULTS**

From total of 2170 patients which underwent colonoscopy, total patients with UC was 176 patients. The prevalence of UC since 2010-2014 was 8.2% at our hospital.



**Figure1. Prevalence ulcerative colitis at Dr. Saiful Anwar General Hospital Malang from 2010-2014**

The frequency of patients with ulcerative colitis in Dr. Saiful Anwar General Hospital Malang in 2010 is 36 patients, in 2011 a number of 27 patients, in 2012 a number of 36 patients, in 2013 a number of 37 patients, and in 2014 a number of 41 patients.

The age at which UC was diagnosed ranged between 17- > 65 years. Males and females were equally amount. Of the total 176 patients with UC, 95 (53.4%) were males and 81 (46.6%) were females. The patients aged 17-25 years patients with UC were 15 (8.4%), patients aged 26-35 years were 12 (6.7%), patients aged 36-45 years were 25 (14%), patients aged 46-55 years were 46 (25.8 %), patients aged 56-65 years were 38 (21.3%), and patients aged >65 years were 40 (22.5%). The average age of patients UC is 41,6 years. Majority of the patients presented with abdominal pain (n = 58 (32.90%)) and weight loss (n = 75 (42.61%)). And the others presented with intestinal symptoms like chronic diarrhea and or without rectal bleeding/mucous.

According to the lifestyle, of the total 176 patients UC only 25% were smokers, 75% were non-smoker. One hundred and six (60.22%) UC patients were not

**Table 1. Clinical characteristics of patients ulcerative colitis at Saiful Anwar General Hospital from 2010-2014**

Patients characteristics	n (%)
Sex	
Male	95 (53.4)
Female	81 (46.6)
Age (year)	
17-25	15 (8.4)
26-35	12 (6.7)
36-45	25 (14)
46-55	46 (25.8)
56-65	38 (21.3)
> 65	40 (22.5)
Sign and symptoms	
Chronic diarrhea	22 (12.50)
Bloody stool	23 (13.06)
Mucous stool	3 (1.7)
Chronic diarrhea with bloody stool and mucous	39 (22.15)
Bloody stool with mucous	14 (7.9)
Chronic diarrhea with bloody stool	16 (9)
Constipation	3 (1.75)
Abdominal pain	58 (32.95)
Weight loss	75 (42.61)
Conjunctiva anemic	30 (17.04)
Life style	
Smoker	
No	132 (75)
Yes	44 (25)
NSAID/ herbal consumption	
No	106 (60.22)
Yes	70 (39.77)
Fiber diet	
Never	28 (15.90)
1-3 x/week	65 (36.93)
4-6 x/week	26 (14.77)
Everyday	50 (27.93)
No data	7 (3.9)
Disease manifestation	
Pancolitis	63 (35.4)
Proctosigmoid/proctitis	56 (31.8)
Leftside colitis	39 (21.9)
Colon ascenden	4 (2.2)
Rectosigmoid+colonascenden	3 (1.7)
Caecum	3 (1.7)
Colontransversum+ascenden+caecum	3 (1.7)
rectum+caecum	2 (1.1)
rectosigmoid+ileumterminalis	1 (0.6)
ileocaecal	1 (0.6)
ileum terminalis	1 (0.6)

**Table 2. Correlation risk factors and ulcerative colitis**

Risk factors	p	r	OR	95% CI
Smoking	0.642	0.12	1.089	0.76-1.55
NSAIDs/traditional herbs	0.359	0.23	1.162	0.85-1.59
Fiber diet				
everyday	0.000	-0.106	2.559	1.7-3.6
4-6 x/weeks			2.507	
1-3 x/weeks			1.492	

NSAID: non-steroidal anti-inflammatory drug

consuming herbal treatment/NSAID and seventy patients (84.09%) consuming herbal poition/NSAIDs. Among the UC patients 15.9% never consumption fiber diet, 36.93% of patients consumption of fiber diet 1-3 times per week, 14.77% of patients consumption of fiber diet 4-6 times per week, and 27.93% of patients consumption of fiber diet everyday.

Based on the location of ulcerative colitis, patients who are on pancolitis were 63 (35.4 %), the

proctosigmoid/proctitis as many as 56 (31.8%), the left-sided colitis as many as 39 (21.9%), the colon ascendens as many as 4 (2.2%), the rectosigmoid and colon ascendens as many as 3 (1.7%), the caecum as many as 3 (1.7%), the colon transversum with ascendens and caecum as many as 3 (1.7%), the proctitis with caecum as many as 2 (1.1%), in the ileo-caecal as many as 1 (0.6%), in the terminal ileum as many as 1 (0.6%).

## DISCUSSION

This study demonstrated that the prevalence of ulcerative colitis at Dr. Saiful Anwar General Hospital Malang since 2010-2014 was 8.2%. This prevalence was higher than that reported by Dr. Cipto Mangunkusumo Hospital Jakarta in 1991-1995, which was 2.5%. It may indicate the increasing of risk factors like industrial or western diet and lifestyle or an increasing number of susceptibility genes that have been identified found to play a role in inflammatory bowel disease.<sup>13</sup> In our study disease prevalence was high in patients between 46-55 years of age, males and females were equally affected which is in line with those reported by Langan et al which reported UC to be most common in 15 and 40 years of age, with second peak of incidence between 50 and 80 years.<sup>23</sup>

The rectum is involved in more than 95% of cases, but in our study the most disease manifestation was pancolitis (35.4%), this is because most of patients who came already in advanced state, which is characterized by abdominal pain (71.7%), weight loss (42.1%), and chronic diarrhea with bloody and mucous (22.15%).<sup>6,19</sup> We tried to explore the relationship between each risk factor that affects the UC incidence. Variable that we use was smoking, the use of herbal medicine or NSAID and frequency of fiber diet. There was no differences for smoking or use of herbal medicine or NSAID in the incidence of UC. But we found that intake of fiber diet frequency different between non-UC with UC patient. We continued our statistical analysis for this variable and we found a negative correlation between fiber diet and UC incidence ( $r = -0.106$ ;  $p = 0.000$ ).

Despite its contributions, this study had certain limitation. First, the design of our study was retrospective study, and the second was, the data that we collected was a secondary data from the medical record which already filled by more than one physician, the third limitation of the study is the quality of the medical record which is not completely filled, that made that we lost some data for each individual (hemoglobin level, albumin level, and risk factors).

## CONCLUSION

The prevalence of UC in our hospital was higher than that reported by Dr. Cipto Mangunkusumo Hospital Jakarta in 1991-1995. Our results showed there is a significant correlation between frequency of fiber diet and UC ( $r = -0.106$ ;  $p = 0.000$ ).

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