

# Prevalence of Crohn's Disease in Endoscopic Unit Cipto Mangunkusumo Hospital

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## ABSTRACT

**Background:** The cumulative number of inflammatory bowel disease patients in Asia has raised three times since early 1990s, although Crohn's disease is still less common than ulcerative colitis. The objective of this study was to provide clinical and demographic data of Crohn's disease patients seen in Endoscopic Unit Cipto Mangunkusumo Hospital and compare the results with other Asian countries.

**Method:** This study was done retrospectively cross-sectional descriptive from medical records of all patients underwent colonoscopy at Endoscopic Unit, Cipto Mangunkusumo Hospital, and histological evaluation in the Department of Anatomical Pathology, Faculty of Medicine, University of Indonesia, between 2007 and 2008. Data was analyzed using SPSS version 17.

**Results:** Of 921 patients who underwent colonoscopy, 19 (2.1%) patients were diagnosed with Crohn's disease. There was no sex preponderance. The mean age was 47.7 years with a peak age at presentation between 51 and 60 years. The main clinical complaints were diarrhea (42.1%), lower gastrointestinal bleeding (36.8%), abdominal pain (10.5%) and upper gastrointestinal bleeding (5.3%). Colonoscopic findings were hyperemia in 94.7%, edema in 57.9%, erosions in 63.2%, ulcerations in 89.5%, pseudopolyp in 31.6%, fragile lesion in 10.5%, stenosis, fistulation, and cobblestone appearance in 5.3%. Involvement of isolated left colon was 26.3%; other manifestations were isolated right colon (10.5%), pancolitis (57.9%), ileitis (5.3%), ileocolitis (36.8%) and skip lesion (5.3%).

**Conclusion:** The prevalence of Crohn's disease in this study was similar to the findings in previous studies in Asian countries, with diarrhea as the main clinical complaint, and pancolitis as the dominant finding in colonoscopy examination.

**Keywords:** Crohn's disease, prevalence, clinical complaints, colonoscopy description

## ABSTRAK

**Latar belakang:** Kejadian penyakit inflamasi kolon di Asia semakin meningkat hingga tiga kali lipat sejak awal tahun 1990, walaupun kejadian penyakit Crohn lebih jarang ditemukan bila dibandingkan dengan kolitis ulseratif. Tujuan penelitian ini adalah untuk mengetahui data klinis dan demografi penyakit Crohn pada pasien yang menjalani kolonoskopi di Unit Endoskopi Rumah Sakit Cipto Mangunkusumo dan membandingkannya dengan epidemiologi di negara Asia lain.

**Metode:** Penelitian ini dilakukan secara potong lintang deskriptif retrospektif dari rekam medis semua pasien yang menjalani pemeriksaan kolonoskopi di Unit Endoskopi Rumah Sakit Cipto Mangunkusumo dan

*pemeriksaan histopatologi di Departemen Patologi Anatomi, Fakultas Kedokteran Universitas Indonesia pada tahun 2007-2008. Data dianalisis dengan menggunakan SPSS versi 17.*

**Hasil:** Dari 921 pasien yang menjalani prosedur kolonoskopi, 19 (2.1%) pasien didiagnosa menderita penyakit Crohn. Rata-rata usia pasien yaitu 47,7 tahun dengan onset gejala terbanyak pada usia 51-60 tahun dan tidak terdapat perbedaan proporsi jenis kelamin. Keluhan utama pasien adalah diare (42.1%), perdarahan saluran cerna bagian bawah (36.8%), nyeri perut (10.5%), dan perdarahan saluran cerna bagian atas (5.3%). Pada hasil kolonoskopi pada pasien ditemukan hiperemis (94%), edema (57%), erosi (63.2%), ulserasi (89.5%), pseudopolip (31.6%), lesi mudah berdarah (10.5%), serta stenosis, fistulasi, dan cobblestone appearance 5.3%. Keterlibatan kolon bagian kiri saja sebesar 26.3%, kolon bagian kanan saja sebesar 26.3%, pankolitis 57.9%, ileitis 5.3%, ileokolitis 36.8%, dan skip lesion 5.3%.

**Kesimpulan:** Prevalensi penyakit Chron pada penelitian ini serupa dengan epidemiologi pada negara-negara Asia. Pada penelitian ini diare merupakan keluhan utama terbanyak dan pankolitis merupakan temuan yang dominan dari pemeriksaan kolonoskopi.

**Kata kunci:** penyakit Crohn, prevalensi, keluhan klinis, deskripsi kolonoskopi

## INTRODUCTION

Crohn's disease (CD) is common for Caucasian populations in Northern Europe and North America. In South America, Asia, and Africa, this disease remains uncommon but appears to be increasing.<sup>1</sup> This perception was changed in the middle of the last century from Central and Western Europe. The changing epidemiology of inflammatory bowel disease (IBD) in Asia is important since the three most populous countries in the world, i.e. China, India and Indonesia, reside in Asia. The cumulative number of IBD patients has raised three times since early 1990s, although CD is still less common than ulcerative colitis (UC).<sup>1</sup> In Indonesia, the prevalence of Crohn's disease in patients underwent endoscopic evaluation was 1.4% in the year 1991–1995 and 5.2% in the year 2000.<sup>2</sup>

The objective of this study was to provide clinical and demographic data of CD patients seen in Endoscopic Unit Cipto Mangunkusumo Hospital and compare the results with other Asian countries. Data obtained will be a basis for further evaluation to monitor the prevalence of CD in Indonesia and to confirm the demographic characteristic of CD and its development in previous years.

## METHOD

This study was a retrospective descriptive study using medical records of patients who underwent colonoscopy. Medical records obtained were data of all patients who underwent colonoscopic examination at Endoscopic Unit, Cipto Mangunkusumo Hospital, Jakarta and histopathological evaluation in the Department of Anatomical Pathology, Faculty of Medicine, University of Indonesia, between January 2007 and December 2008. The inclusion criteria were patients with colonoscopic findings that resemble CD and confirmed with histopathological evaluation. Data obtained were sex,

age at presentation, symptoms indicated for colonoscopic examination, appearance of CD on colonoscopic examination and site of involvement. Data was analyzed using computer program statistical package for social sciences version 17 (SPSS Inc., Chicago, IL, USA) descriptively as means and proportions.

## RESULTS

From January 2007 to December 2008, there were 921 patients who underwent colonoscopy. From those patients, 19 (2.1%) patients had colonoscopic appearance that resembles CD. The mean age was 47.7 years with standard deviation 18.44 years, and a peak age at presentation was 51-60 years. The main clinical complaints were diarrhea 42.1% patients. The characteristics could be seen in Table 1. The most colonoscopic finding was hyperemia in 94.7% patients. Most patients had pancolitis 57.9%, whereas involvement of isolated left colon was 26.3% and isolated right colon 10.5% (Table 2).

**Table 1. Characteristic of Crohns' disease patients**

Characteristics	n (%)
Age (years)	
< 30	3 (15.8)
31-40	3 (15.8)
41-50	4 (21.1)
51-60	5 (26.3)
61-70	2 (10.5)
> 70	2 (10.5)
Mean ± SD	47.77 ± 18.44
Sex	
Male	9 (47.7)
Female	10 (52.3)
Clinical complaints	
Diarrhea	8 (42.1)
Lower gastrointestinal bleeding	7 (36.8)
Abdominal pain	2 (10.5)
Upper gastrointestinal bleeding	1 (5.3)
Fever	0 (0)
Constipation	0 (0)

**Table 2. Colonoscopic findings and site involvement of Crohns' disease patients**

	n (%)
Colonoscopic findings	
Hyperemia	18 (94.7)
Ulcerations	17 (89.5)
Erosion	12 (63.2)
Edema	11 (57.9)
Pseudopolyp	6 (31.6)
Fragile lesion	2 (10.5)
Stenosis, fistulation, and cobblestone appearance	1 (5.3)
Site of involvement	
Pancolitis	11 (57.9)
Ileocolitis	7 (36.8)
Isolated left colon	5 (26.3)
Isolated right colon	2 (10.5)
Ileitis	1 (5.3)
Skip lesion	1 (5.3)

## DISCUSSION

This study found the prevalence of CD was 2.1%. This prevalence was similar to other studies in Asia, but compared to prevalence in Indonesia previously, it seemed to be decreasing. Possibly, the reason was the different settings, such as prevalence of 1.4% was from total colonoscopy done, and 5.2% from total cases of chronic, bloody diarrhea and abdominal pain. So, the prevalence of CD relatively does not change over years. These results were similar to the findings in previous studies in Asian countries.<sup>1,2,3</sup>

The prevalence of CD is 35-100/100,000 for Caucasian populations in Northern Europe and North America. In South America, Asia, and Africa, CD remain uncommon but appear to be increasing.<sup>1</sup> The incidence of CD ranges from 0.5 to 1.0 per 100,000 person year.<sup>4,5</sup> A study in Japan reported the annual incidence rates of CD was 0.514/100,000 population, whereas prevalence rates was 5.85/100,000 in 1991. The Korean Association for Study of Intestinal Disease (KASID) found the mean annual incidence rates of CD increased from 0.05 per 100,000 inhabitants in 1986-1990 to 1.34 per 100,000 inhabitants in 2001-2005 and the adjusted prevalence rates of CD per 100,000 inhabitants was 11.24 (95% CI = 9.29-13.18).<sup>6</sup> A study in the Philippine General Hospital (PGH) found 18 CD patients in 1999-2004. The mean annual incidence of IBD was 2.05 new cases per 100,000 new consults per year.<sup>7</sup> In Indonesia, the prevalence of CD in patients underwent endoscopic evaluation was 1.4% in the year 1991-1995 and 5.2% in the year 2000.<sup>2,3</sup>

The Asia-Pacific region once thought to be free from IBD has been changed by the finding of significant numbers of publications emerging in literature. The perception changed in the middle of the last century from Central and Western Europe.

Important demographic changes likely to be followed in Asia include an exponential increase in IBD in industrialized nations and an increase in the incidence of UC precedes that in CD with a time lag of 15-20 years.<sup>1,8</sup>

Descriptive epidemiological data on IBD, both cross sectional and over time periods are abundant in the West countries, whereas only little information are available in Asia. Problematic issues related to IBD study in Asia include lack of population based registries, limited access to health care facilities, limited availability of diagnostic tests and infectious diseases especially diarrhea confounding the diagnosis of IBD.<sup>1,8</sup> These conditions might be the reason for the difference incidence of IBD from the Western countries.

The peak age of onset for CD that has a bimodal age of presentation in the West, is not observed in Asian countries.<sup>1</sup> But the PGH study found mean age of presentation was 41 years and a bimodal peak in the age at presentation was noted during 21-30 years and 51-60 years.<sup>7</sup> There is some weak and inconclusive evidence of a bimodal age of onset of IBD in Asian patients.<sup>9</sup> In this study, the peak age of CD was during 51-60 years, with no bimodal peak found. These findings were quite similar to the common presentation of CD in Asian population.

In European and North American studies, the distribution of IBD is roughly equal across sex or show a modest female predominance but in Japanese, Chinese and case series from India, CD was more commonly seen in males.<sup>1</sup> The PGH study found there was male predominance with a male/female ratio of 2.1 : 1.<sup>7</sup> Male appeared to have greater risk for CD.<sup>10,11</sup> There was no sex preponderance in the prevalence of CD in this study.

Clinical features that are common of CD include fever, abdominal pain, weight loss, signs of malnutrition, and abdominal mass. Other symptoms such as diarrhea, rectal bleeding and perianal disease are fairly common.<sup>12</sup> The PGH study found abdominal pain (45.4%), diarrhea (22.7%) and lower gastrointestinal bleeding (18.1%) were the main reasons for medical consultation.<sup>7</sup> Clinical presentation of CD in this study was also quite similar, whereas diarrhea, lower gastrointestinal bleeding, and abdominal pain as the main symptoms that lead the patients to consult the doctor. One difference was upper gastrointestinal bleeding was the main symptom that leads patients to colonoscopic evaluation. Because data obtained were from endoscopic unit, there was lack of other clinical data such as weight loss, abdominal mass or signs of malnutrition.

Frequent site of involvements are in colon and ileum, while jejunum, stomach or duodenum and esophagus are infrequent.<sup>12</sup> The PGH study found that CD patients have a significant predilection to ileocecal involvement (55.6%). Only 6 (33.3%) patients presented with pure colitis and 2 (11.1%) with isolated small intestinal involvement. In Japan, however, the isolated small intestinal type predominates.<sup>7</sup> This study found that most patients (57.9%) had pancolitis while ileocolitis was 36.8%, isolated left colon and isolated right colon were 26.3% and 10.5%, ileitis 5.3%, and skip lesion 5.3% respectively. These findings were also similar to the common findings in CD.

Common colonoscopic findings are aphthous, linear ulcers, and cobblestone appearance, while friability, pseudopolyps and rectal involvement are fairly common.<sup>12</sup> Findings of the colonoscopic appearance was dominated by hyperemia, ulcerations, erosions, edema, that were the common findings. Different findings are the low proportion of cobblestone appearance (5.3%).

In Korea, Kim et al, found some clinical and genotypic characteristics unique in Korean IBD patients, and the clinical course that seems milder and has better response to medical management.<sup>6</sup> These differences might provide significant clues about the etiology and pathophysiology of IBD. In Indonesia we have not had the genomic data and treatment response of IBD patients. Further comprehensive population based studies are required to provide more information about IBD in Indonesia that might be useful for the management of IBD patients.

## CONCLUSION

The prevalence of Crohn's disease in this study was similar to the findings in previous studies in Asian countries. Diarrhea was the main clinical complaint, while pancolitis was the dominant finding in colonoscopy examination. The observed increase in

CD in Asia during the past decade was not observed in this study. Despite globalization of IBD, especially CD, there remains a difference in the disease prevalence between developed and developing countries, particularly Western and Asian countries. Greater awareness and better availability of health care and improved study methods must be applied to monitor the prevalence of CD and evaluate the development in the future.

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