زانکۆی سەلاحەدین - هەولێر
Salahaddin University-Erbil

"Evaluation of inflammatory bowel disease (specifically Crohn's disease) in Erbil City from 2019 _2023"

Research Project

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CERTIFICATE

This research project has been written under my supervision and has been submitted for the award of the **BSc.** degree in **Biology** with my approval as a supervisor.

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DEDICATION

This piece of research is dedicated to the Department of Biology, Shaqlawa College of Education, Salahaddin University-Erbil

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SUMMARY OR ABSTRACT

- **Inflammatory bowel disease; is comprised of two major disorders: ulcerative colitis and Crohn's disease ,most patients have distinct features of either Crohn disease or ulcerative colitis, but approximately 5% to 10% have features of both diseases known as indeterminate colitis The incidence of CD is more widely distributed than UC between populations. The aim of the study to identify the clinical characteristic of patients diagnosed as CD in Rzgare and par hospital in Erbil city. This research studies was conducted in Rzgare and par hospital in Erbil city during 2019-2023 during this period we included 108 diagnostic patients in whom diagnosis of CD. And this disease affected by different factors such as age gender smoking type of CD disease and source of infection treatment. Young age group (21-30) were more prevalent Finally males are more affected than females , males have 52.7% infection and females have 47.2% infection. Crohn a disease is distributedin Erbil city of Iraq kurdistan region . The rate of CD has increased significantly in comparison to other studies done in Iraq and near countries .Meantime for diagnosis of CD is more than UC like most of the eastern and western studies.**

Key words; Inflammatory bowel disease, Crohns disease, Ulcerative disease

LIST OF CONTENTS

Contents

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

IBD = inflammatory bowel disease

CD = corhn's disease

CDs = corhn's disease (smoking)

UC = ulcerative disease

IC = intermediate colitis

CT = Computerized tomography

ME = Myalgic encephalomyelitis

HPB=Hepato-pancreato-biliary

1. INTRODUCTION

Inflammatory bowel disease; The term "inflammatory bowel disease" refers to a group of illnesses where the immune system malfunctions, overreacts, and destroys normal cells and tissues instead of getting rid of foreign substances like bacteria, viruses, and tumours that are different from the body. Furthermore, it is believed that a number of autoimmune and metabolic disorders are brought on by disruptions to the intestinal barrier and modifications to the gut microbiome (Al Bander et al. 2020)The two main conditions that make up inflammatory bowel disease (IBD) are ulcerative colitis (UC) and Crohn's disease (CD). The majority of patients with IBD have specific symptoms associated with either UC or CD, but 5% to 10% also have traits associated with both conditions (referred to as indeterminate colitis). Ulcerative colitis: This chronic inflammatory illness is typified by bouts of recurrent inflammation that are restricted to the colon's mucosal layer. The rectum is nearly always involved, and it may spread proximally and continually to affect adjacent colonic regions. The symptoms of CD include skip lesions and transmural inflammation. Because CD is characterised by transmural inflammation, it frequently causes fibrosis and obstructive clinical manifestations that are uncommon in ulcerative colitis. In addition, sinus tracts that burrow through and pierce the serosa as a result of transmural inflammation may result in microperforations and fistulas(Gasche et al. 2000; Silverberg et al. 2005). Environmental variables and genetic predisposition work together to determine when they first appear. Genetic Elements: The susceptibility of hosts .It has long been known that IBD can run in families, but the inherited component appears to be more robust in CD than in UC, with monozygotic twin concordance rates in CD ranging from 30% to 58% while in UC it is between 10% and 15%.the investigation of individuals with extremely early-onset inflammatory bowel disease (IBD), typically accompanied by a family history of the disease and significant environmental risk factors such as air pollution, breastfeeding, smoking, nutrition, stress, exercise, seasonal variation, and

appendectomy during childhood. the investigation of individuals with extremely early-onset inflammatory bowel disease (IBD), typically accompanied by a family history of the disease and significant environmental risk factors such as air pollution, breastfeeding, smoking, nutrition, stress, exercise, seasonal variation, and appendectomy during childhood. Part 1 of a 2-part series, this review gives an overview of these outside factors that may have contributed to the onset or aggravation of CD(Xavier and Podolsky 2007; Cader and Kaser 2013; Spehlmann et al. 2008). As a known risk factor for CD, smoking is more common among CD patients than in the general population. Patients with CD who smoke had greater rates of surgery, intestinal problems, clinical relapses, and the requirement for additional immunosuppressive medicine as compared to nonsmokers. Furthermore, a higher pack-year is linked to a higher risk of CD, and clinical results have been found to be poorer for heavy smokers than for light smokers. It's interesting to note that women seem more vulnerable than males to the negative impacts of smoking in CD(Mahid et al. 2006; Higuchi et al. 2012; Cosnes 2010) Concurrent involvement of multiple systems and organs is typical, though, and may involve HPB, renal, musculoskeletal, and noscopy with biopsy. This is because noscopy with biopsy can reach difficult-to-reach areas of the small intestine and can be used in place of surgery to treat strictures through balloon dilation. Louis et al. 2003). Fever, chronic diarrhoea, exhaustion, and weight loss are common symptoms. 7; HPB-surgery includes general surgical management of illnesses of the liver, pancreas, gallbladder, and bile(Crohn, Ginzburg, and Oppenheimer 1932)ducts, both benign and malignant(Levine and Burakoff 2011; Pokala and Shen 2020). UC was the first illness to be identified and classified as a disease. The British surgeon Sir Samuel Wilks, in 1859, In the year 1932, American physician Burrill B. Crohn, together with his associates Gordon D. and Leonsburg, distinguished between Crohn's disease (CD) and ulcerative colitis (UC). Oppenheimer ,who described the condition at a meeting at the American Medical Association. After five months, a study was published in which the illness was identified as a distinct entity from

UC and given Dr. Crohn's name. Nonetheless, German surgeon Wilhelm Fabry reported a case that resembled CD in 1612. Between Fabry and Crohn's disease, there were many descriptions that were classified as "regional ileitis" or "regional enteritis."Morgagni, for example, recorded these findings in 1769 while discussing the autopsy of a 20-year-old man(Aufses 2001; Crohn, Ginzburg, and Oppenheimer 1932). The objective of the research was to determine a clinical trait of Crohn's disease patients at Rzgare and par Hospital in Erbil City. Future genomic studies ought to help with risk assessment and evaluation of various treatment reactions as well as advancements in medicine. Despite the fact that environmental.

2. Methodology & Research design

One hundred and eight patients affected by CR disease in Erbil province Rzgar and Par were studied. All patients who visited Rzgare or Par Hospital have been scanned , If positive, the patients family should visit there to ascertain whether it is hereditary. the patients were receiving biological injections monthly (four rounds). The patients were drawn from the following places inside Erbil, out skirts, Villages and emigrants. We aimed to study the prevalence some infections cause by CR in Erbil province of about 108 patients. of whom female (47.2%_ age range,16_49years). There are male patients (52.7%_age range, 11_58years).2019_2023

3. RESULTS AND DISCUSSION

The distribution of age groups in male and female CD patients is It is presented in Table 1 . The disease is more common in males than female CD patients, the. The highest range started between 21_30 years).Colonoscopy, CT, and ME phototherapy revealed three types of CD disease . Mild-moderate 15 (% 13.8) , moderate to severe 52 (% 48.14) and several – fulminant 41 (% 37.9) .about discussion,

Table 1; The distribution of age groups in male and female CD patients.

AGE GROUPS					
age	***female***	***%***	***male***	***%***	***p.value***
10_20	14	12.90%	7.00	6.40%	
21_30	12	11.11%	15	13.80%	9.53
31_40	10	9.20%	13	12.03%	
41_50	9	8.30%	13	12.03%	
51-60	6	5.50%	9	8.30%	

Table 2;Prevalence of CD in male and female

GENDER		
female	**male**	p.value
51	57	0.563
52.70%	52.70%	

Table 3;The effect of smoking on CD

SMOKING	NON SMOKING	EX SMOKING	p.value
32	50	26	6.86
29.6%	46.2%	24.07%	

Table 4;Showing the different types of CD

mild_moderate	*moderate_sever*	*sever_fulminat*	*p.value*
(150_220)	*(220_450)*	*(>450)*	*1.54*
16	*52*	*41*	
14%	*48.14%*	*38%*	

Table 5:The effect of CD according to the site of infection

site of infection			
small intestine	*ileal*	*perinal*	*p.value*
38	*52*	*18*	*5.53*
35%	*48%*	*17%*	

Type & Dose of Biologic Therapy:Infliximab Remicade Visit date Biology dose Inflammatory Bowel Disease (IBD) Biologic Medication- Form at HGH.

Table 6:Type & Dose of Biological Therapy

TREATMENT		
Biology	***immunosuppressant***	***parentral nutrition***
Inflximab =40	*azathioprine=33*	*5*
Dadalimum b=17	*methotrexate=13*	

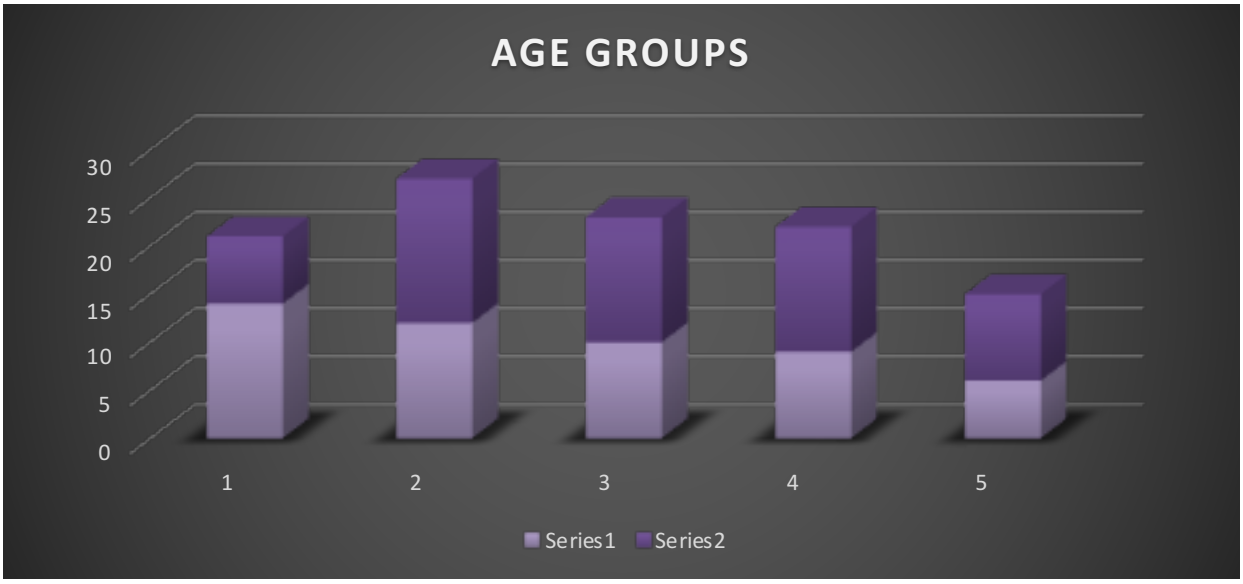

Figure 1: bar chart showing the distribution of age group

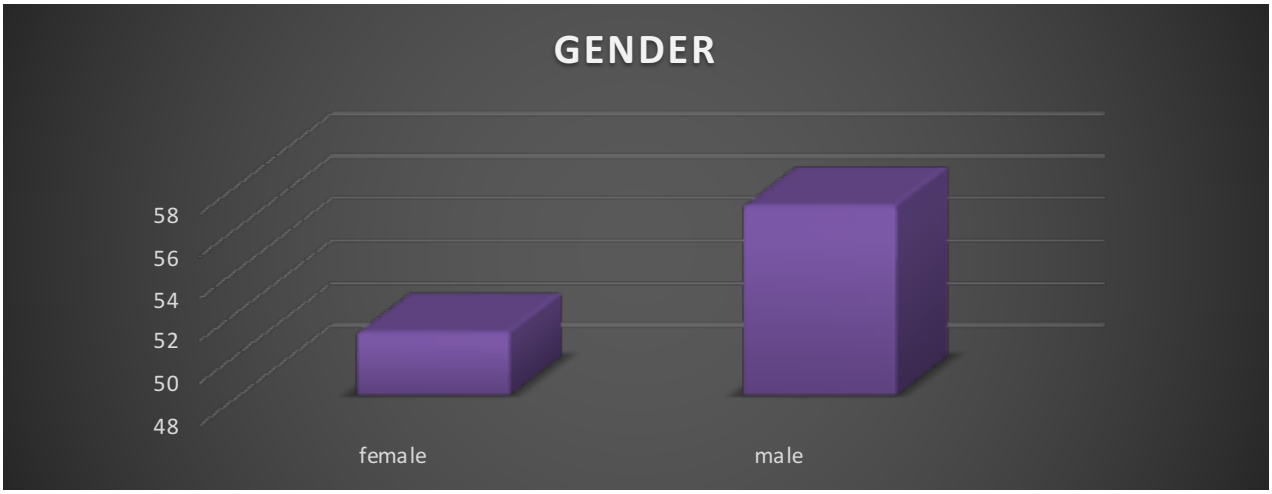

Figure 2: prevalence of CD according gender (male and female)

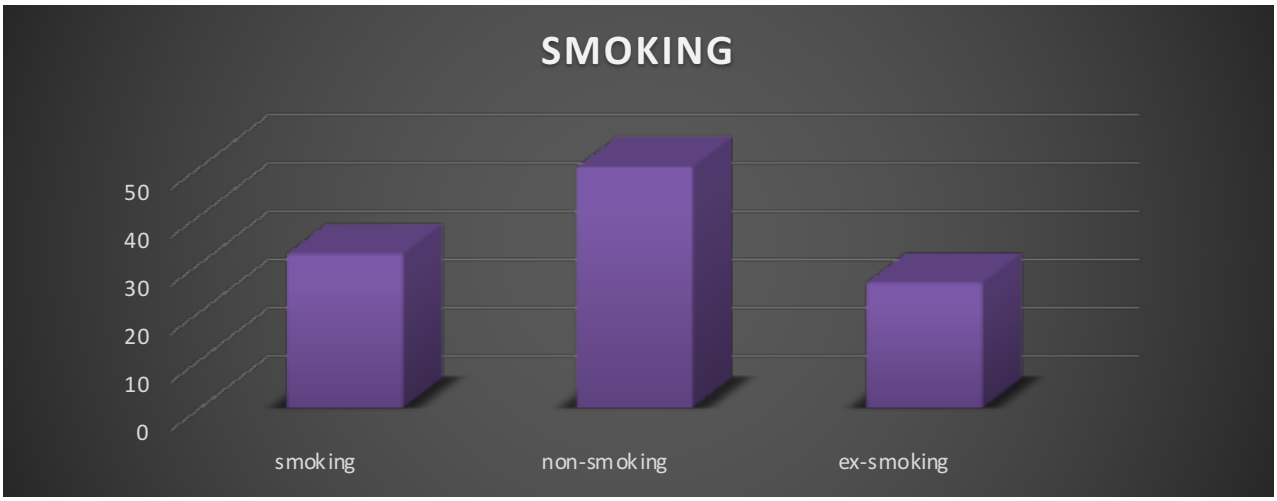

Figure 3Figure -3: effect of smoking on CD

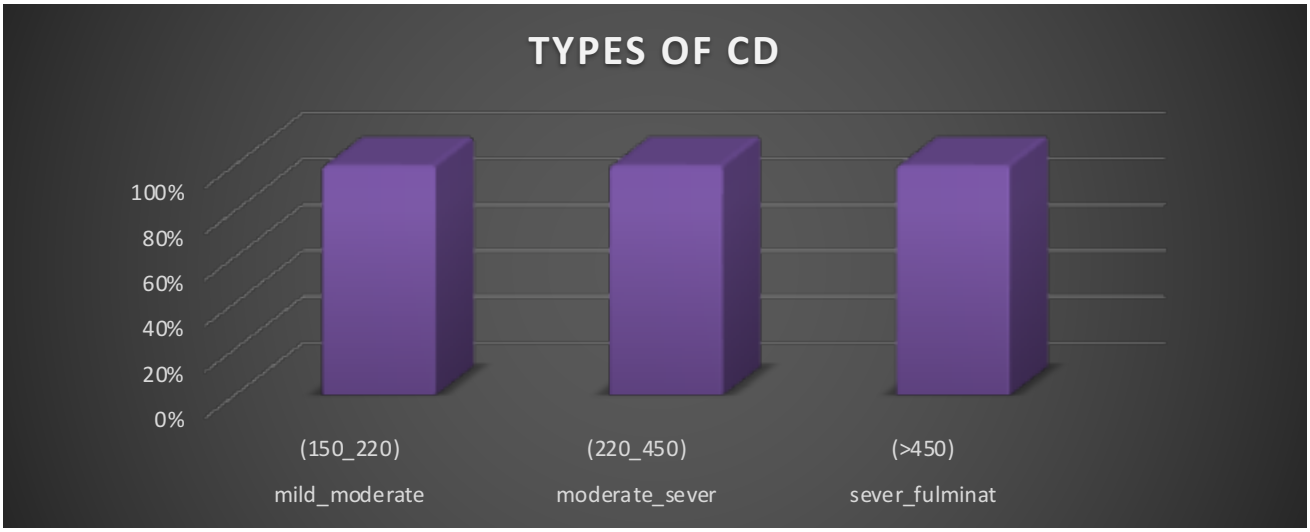

Figure 4: number the type of CD

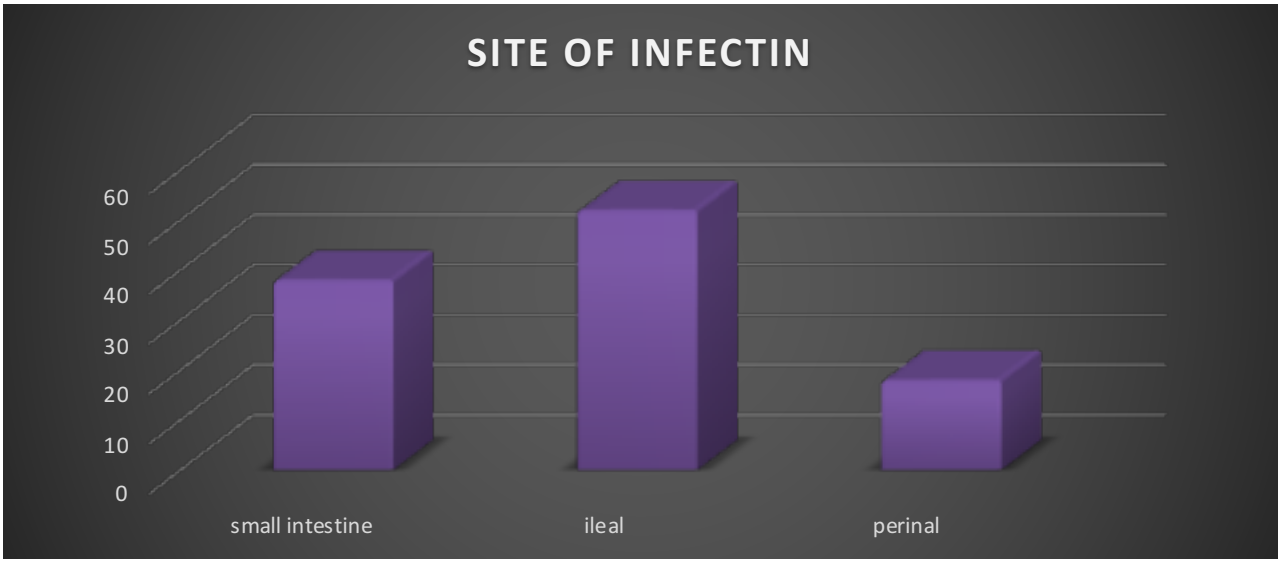

Figure 5: the effect of CD according to the site of infection

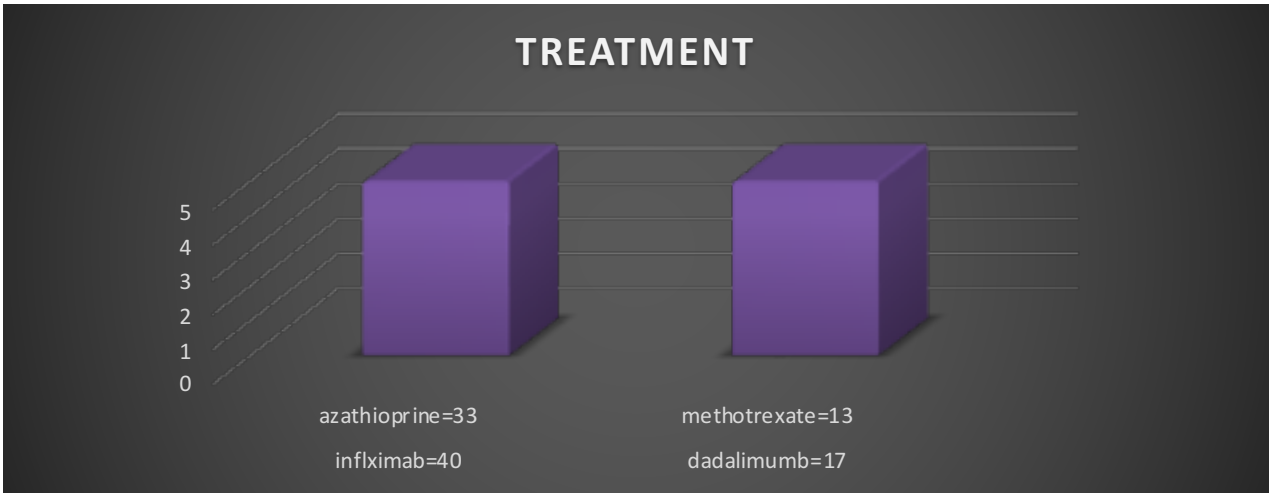

Figure 6;bar chart showing type and dose of biological therapy

In this study, used a standardised approach to describe burden due to IBD at the global, super-region, regional, and national levels. report that currently, approximately nearly 3·9 million females and nearly 3·0 million males are living with IBD worldwide and the number of prevalent cases is on the rise. This is important for health-care delivery systems and economies in the global context of treating chronic diseases like IBD, because standard care for these conditions, particularly immunotherapies, is extremely costly(Alatab et al. 2020).. The IBD has been investigated in other countries as well. In the present study, 65.62% were diagnosed with UC and the remaining 34.38% with CD. The studies showed that UC is more prevalent than CD in other countries. For example, a study done by (Shirazi et al. 2013)showed that of the total 200 patients, 108 patients (54%) were diagnosed with CD and 92(46%) with UC. In this study peak age of onset for IBD is 35 year which correlate with study conducted by(Amira, Fayadh, and Al-Akayshi 2001). 35.5 year in Iraq, yang SK et al(Feshareki and Soleimany 1976) 35 year in Korea and by Leong et al(Leong, Lau, and Sung 2004). 34 year in China, while it is lower in study done by Morita N et al. ((Morita et al. 1995)24 year in Japan. The ratio of male to female patients was (0.9/1), which show a slight female gender predominance for IBD that is exactly similar to 2 studies done by (Amira, Fayadh, and Al-Akayshi 2001). The number of drugs used directly correlated with both specific concern and general harm scores for all patients ((Tsianou 2016) where the number of drugs used correlated positively with the general harm subscore (Tsianou 2016). A possible explanation of this result is that patients using high number of drugs surely will have high concerns about these drugs. In the current study, the number of chronic diseases directly correlated with general overuse score in UC patients however(Jebur, Kadhim, and Firhan 2018). Regarding comparison between UC and CD patients in response to infliximab there was no significantly different and 36.8% UC colitis patients in compared to 23.1% CD patients had no responded to infliximab treatment, study in Turkey where UC duration was longer than CD (Yüksel et al. 2009). This may be due to that it takes longer to diagnose CD than

UC (Ozin et al. 2009). The frequency of patients with active disease (relapsed) was significantly higher in patients with UC than in CD patients (Jebur, Kadhim, and Firhan 2018). A French study was conducted in 3000 patients with CD assigned the smoking as light smokers (1–10 cigarettes per/day) and heavy smokers (>10 cigarettes/d). The study searched for the time percentage patients experienced with active disease and their need for immunosuppression(Seksik et al. 2009). Smoking is associated with an increased risk of Crohn's disease(Harries et al. 1982). The study showed that the patients with CD were more likely to be smokers compared to the patients UC group. Smoking has been reported to be an independent risk factor for the development of CD. In addition, it has been associated with more severity and refractory disease(Parkes, Whelan, and Lindsay 2014). The primary evidence on the smoking role on CD development backs to the UK study involved 82 patients with CD and their 82 matched controls(Kw 1984). Their study found that the patients with CD were more likely to smoke (relative risk: 3.5, 95%)in comparison with their controls in UC group(Hassan and Delmany 2018). Behavioural and environmental factors might play an increasingly critical role in the development of IBD(Shouval and Rufo 2017).Different factors that might increase the risk of developing IBD include smoking, lifestyle choices, discontinued breastfeeding, enteric infections, appendicectomy, and air pollution(Shouval and Rufo 2017; Abegunde et al. 2016). Improvement in access to health-care systems, more widely available diagnostic tools, and increased awareness on the part of both patients and physicians might also contribute to higher rates of diagnosis.

4. CONCLUSIONS AND RECOMMENDATIONS

- Crohn a disease is distributedin erbil city of Iraq kurdistan region .
- The rate of CD has increased significantly in comparison to other studies done in Iraq and near countries.
- The age group of 21 to 30 years old is more prevalent than that of younger or older individuals.
- The objective of the research was to determine a clinical trait of Crohn's disease patients at Rzgare Hospital in Erbil City. Future genomic studies ought to help with risk assessment and evaluation of various treatment reactions as well as advancements in medicine. Despite the fact that environment

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