The Cost of Inflammatory Bowel Disease Care: How to Make it Sustainable
IBD Meeting Tabriz 28/1/1404

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Patients living with IBD

- Inflammatory bowel diseases (IBD) (Crohn's disease [CD] and ulcerative colitis [UC]), affect approximately **7 million** people globally. They should live with IBD for **50 years**

- The prevalence of IBD **is steadily climbing**, **approaching 1%** in certain industrialized regions, including Europe and North America, within the next decade.

- More patients living with IBD, combined with **continuing innovations in IBD therapeutics**, diagnostics, and preventative strategies, will inevitably require **escalating health care resources.**

Global IBD Epidemiology 2019

The global, regional, and national burden of inflammatory bowel disease in 195 countries and territories, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017

GBD 2017 Inflammatory Bowel Disease Collaborators*

Summary

Background The burden of inflammatory bowel disease (IBD) is rising globally, with substantial variation in levels and trends of disease in different countries and regions. Understanding these geographical differences is crucial for formulating effective strategies for preventing and treating IBD. We report the prevalence, mortality, and overall burden of IBD in 195 countries and territories between 1990 and 2017, based on data from the Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) 2017.

Methods We modelled mortality due to IBD using a standard Cause of Death Ensemble model including data mainly from vital registrations. To estimate the non-fatal burden, we used data presented in primary studies, hospital discharges, and claims data, and used DisMod-MR 2.1, a Bayesian meta-regression tool, to ensure consistency between measures. Mortality, prevalence, years of life lost (YLLs) due to premature death, years lived with disability (YLDs), and disability-adjusted life-years (DALYs) were estimated. All of the estimates were reported as numbers and rates per 100 000 population, with 95% uncertainty intervals (UI).

Findings In 2017, there were 6·8 million (95% UI 6·4–7·3) cases of IBD globally. The age-standardised prevalence rate increased from 79·5 (75·9–83·5) per 100 000 population in 1990 to 84·3 (79·2–89·9) per 100 000 population in 2017. The age-standardised death rate decreased from 0·61 (0·55–0·69) per 100 000 population in 1990 to 0·51 (0·42–0·54) per 100 000 population in 2017. At the GBD regional level, the highest age-standardised prevalence rate in 2017 occurred in high-income North America (422·0 [398·7–446·1] per 100 000) and the lowest age-standardised prevalence rates were observed in the Caribbean (6·7 [6·3–7·2] per 100 000 population). High Socio-demographic Index (SDI) locations had the highest age-standardised prevalence rate, while low SDI regions had the lowest age-standardised prevalence rate. At the national level, the USA had the highest age-standardised prevalence rate (464·5 [438·6–490·9] per 100 000 population), followed by the UK (449·6 [420·6–481·6] per 100 000). Vanuatu had the highest age-standardised death rate in 2017 (1·8 [0·8–3·2] per 100 000 population) and Singapore had the lowest (0·08 [0·06–0·14] per 100 000 population). The total YLDs attributed to IBD almost doubled over the study period, from 0·56 million (0·39–0·77) in 1990 to 1·02 million (0·71–1·38) in 2017. The age-standardised rate of DALYs decreased from 26·5 (21·0–33·0) per 100 000 population in 1990 to 23·2 (19·1–27·8) per 100 000 population in 2017.

Lancet Gastroenterol Hepatol 2019

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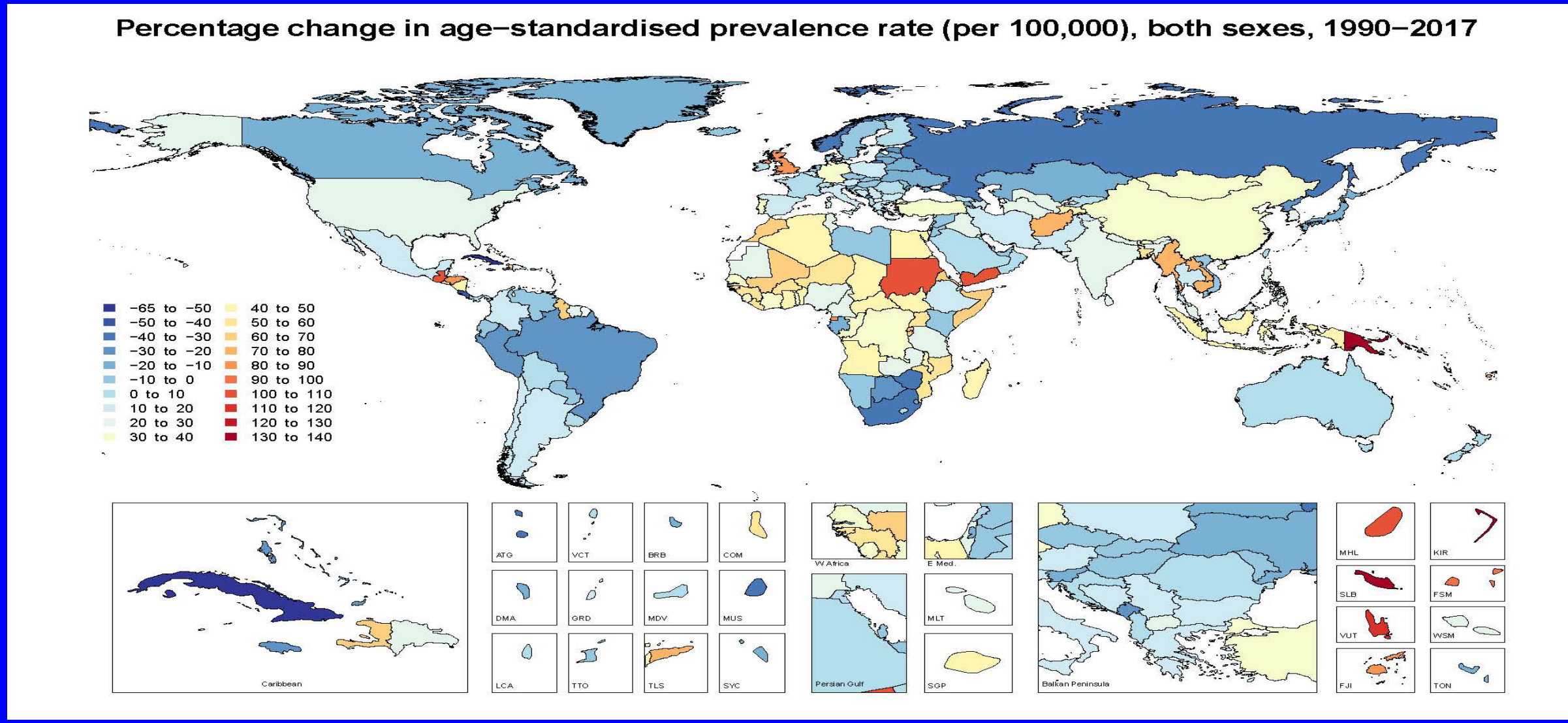
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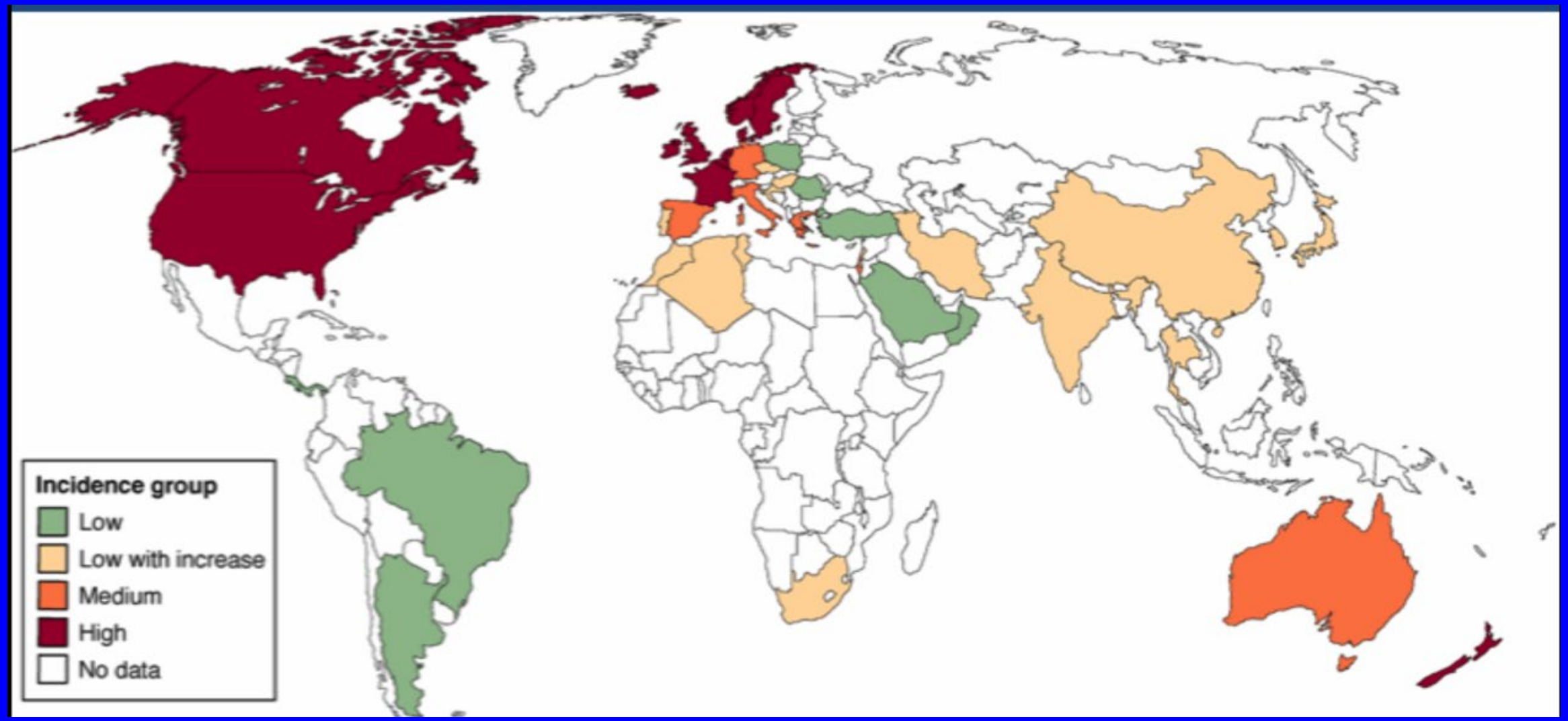
IBD is Lifelong Disabling Disease

- IBDs are lifelong (50 years) disabling conditions affecting mainly young adults .
- Because treatment aims to control disease rather than merely symptoms.
- Greater cumulative exposure to these agents increases patients' vulnerability to long-term adverse effects, including malignancies.

Increase of 85% in global prevalent cases of IBD between 1990 and 2017



Global Raising Incidence of IBD



Constant rise in the global incidence and prevalence of IBD

- A number of studies epidemiological studies presented highlighted the constant rise in the global incidence and prevalence of IBD despite continuing advances in the diagnostic and management tools available to prevent and treat the disease.
- The prevalence and incidence of IBDs **are rising even in Western countries and especially in the elderly.**
- Older adults are the fastest-growing subpopulation of patients with IBD.

IBD
in Iran

First Report Of IBD in Iran: No case of Crohn disease America journal of Gastroenterology 1985

Comparative Study > Am J Gastroenterol. 1985 Nov;80(11):862-6.

Ulcerative colitis in Iran: a review of 112 cases

S H Mir-Madjlessi, B Forouzandeh, R Ghadimi

PMID: 4050759

Abstract

Despite claims of rarity, chronic ulcerative colitis is being encountered with increasing frequency in developing countries. We report our experience with 112 patients with chronic ulcerative colitis diagnosed during a 10-year period between 1973 and 1982 in Tehran, Iran, and compare the demographic and clinical features of chronic ulcerative colitis on our patients with those reported from other countries. Significant differences included the mild course of the disease, the absence of skin manifestations, and the rarity of colorectal cancer in our patients. The importance of changing socioeconomic status and cultural factors on the development of chronic ulcerative colitis is briefly discussed. The extreme rarity of Crohn's disease in Iran is noted.

Second Report Of IBD in Iran: No case of Crohn disease Iranian Journal of medical Sciences 1986

Iranian Journal of Medical Sciences/Vol 11, Nos. 1—4, October 1986

ULCERATIVE COLITIS IN SOUTHERN IRAN
A REVIEW OF 64 CASES

R. Malekzadeh

From the Department of Medicine, Medical School, Shiraz University, Shiraz, Iran.

First Report of Crohn's disease in Iran :Gastroent 2000

Gastroenterology 2000;118(4-Suppl 2): A 6172

Rising Incidence of Crohn's Disease in Iran over a Decade (1989 – 1999)

R. Malekzadeh, Zh. Varshoesaz, Sh. Merat, S.H. Mirmajlesi, Sh. Hadidchi, Sh. Agah, H.Tavakoli,

Digestive Disease Research Center- Shariati Hospital-Tehran University of Medical Sciences

Background :

Crohn's disease (CD) was considered to be rare or nonexistent in Iran up to 1985 (Am J Gast 1985; 80:826). Recently we observed a trend of increaseing frequency of CD in Tehran. During the last 25 years the urban population of the country has doubled and a sharp decease in infant mortality rate from 130/1000 in 1975 to 33/1000 in 1995 occurred.

First Report of Crohn's disease in Iran :Iranian JMS 2000

Iranian Journal of Medical Sciences / Vol. 25, Nos. 3 & 4, December 2000

Crohn's Disease: A Review of 140 Cases From Iran

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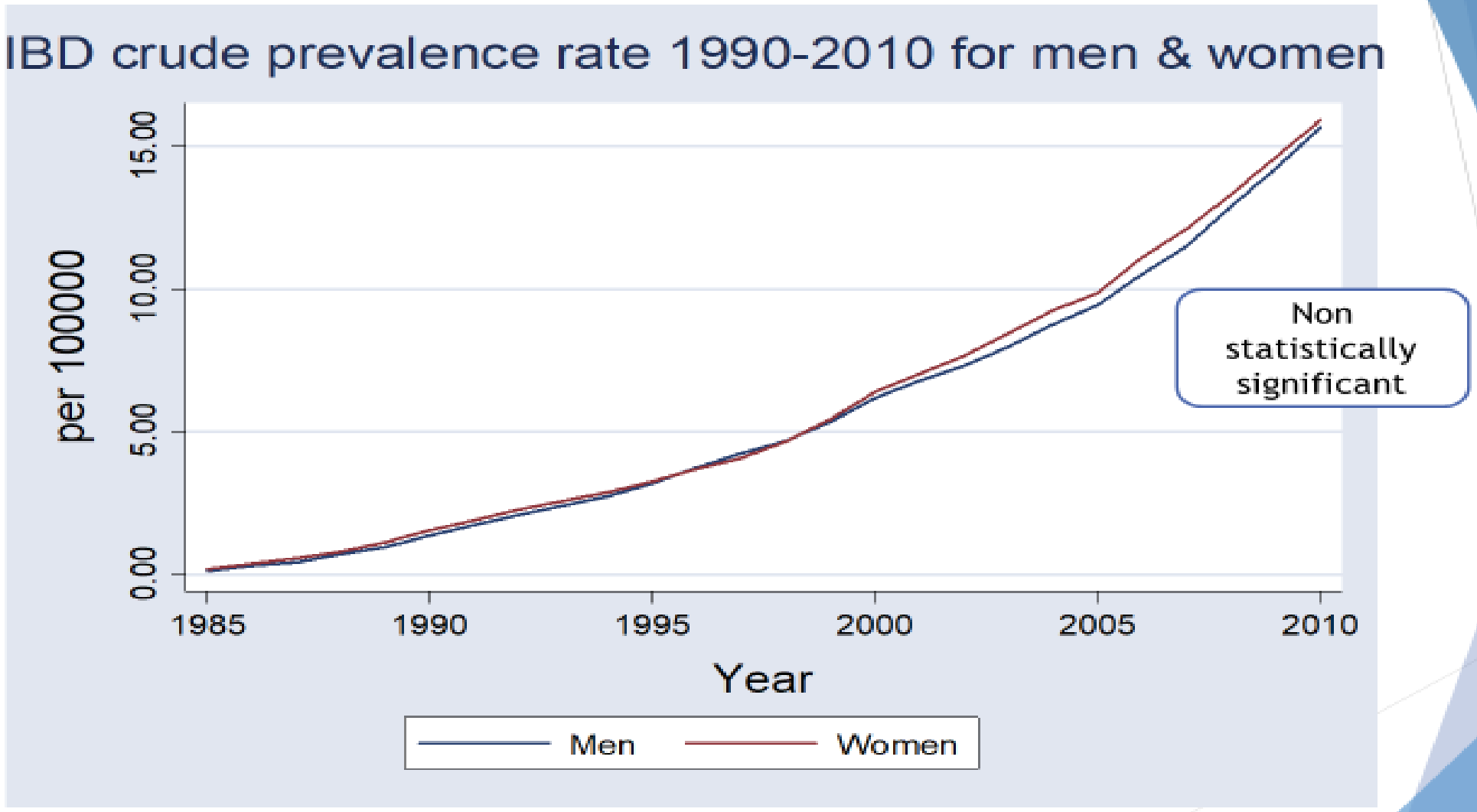
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ABSTRACT

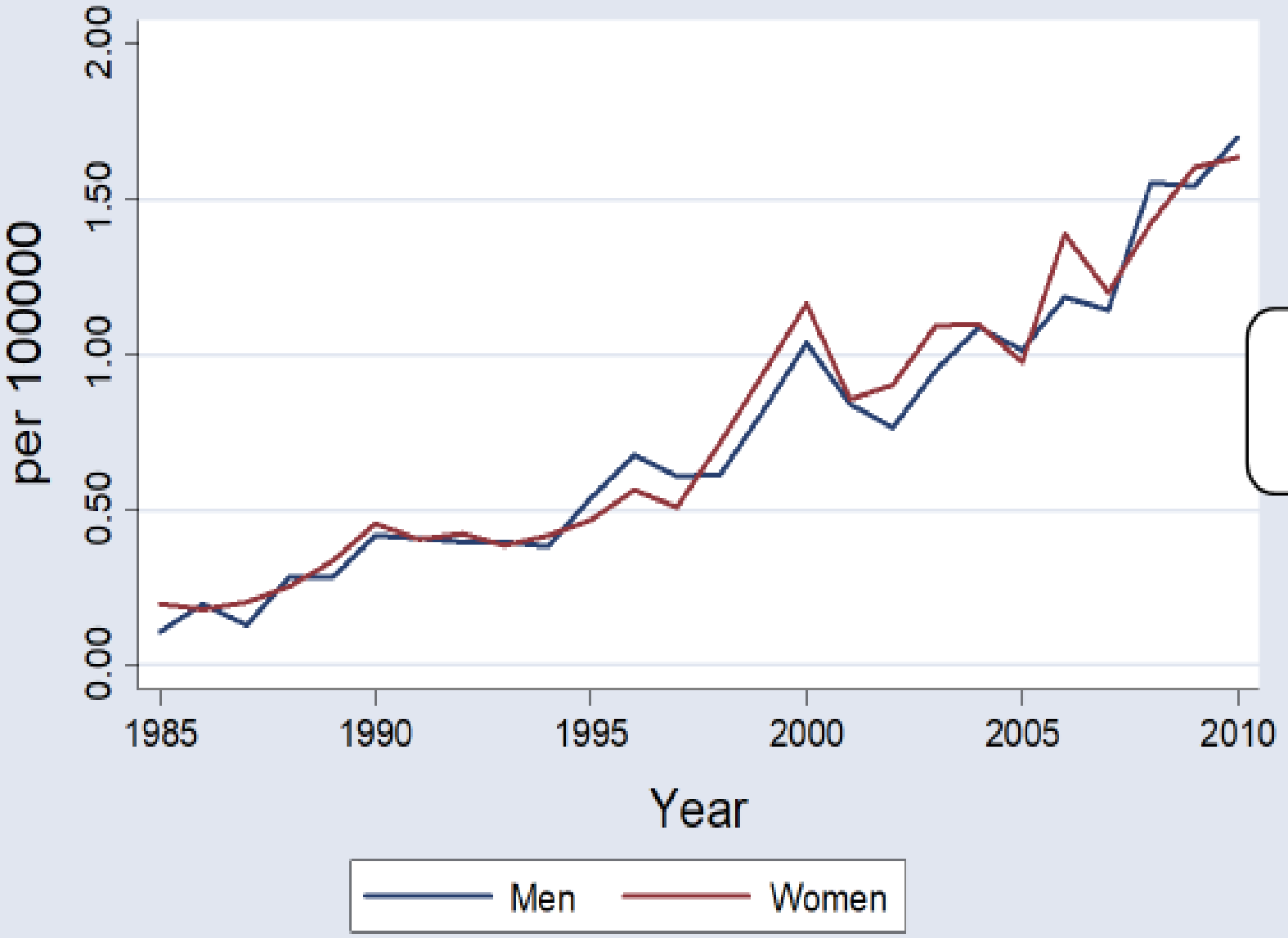
Background: Crohn's disease (CD) has an increasing incidence in Europe and North America.
Objective: Recently, however, this disease has also been increasingly reported from developing countries. Herein, we report 140 cases from Iran, which to the best of our knowledge is the largest series of CD reported from the Middle East excluding Israel.
Methods: During a retrospective study, charts of all cases diagnosed as CD within an 11-year period from 1989 to 1999, in three tertiary referral centers of Tehran were studied. The diagnosis was confirmed by clinical, radiologic, endoscopic and histologic features in 140 cases. Demographic, clinical presentation and paraclinical findings of the cases are presented.
Results: 140 proven cases of CD were identified. Sixty-five (46.4 %) were males and 75 (53.6 %) were females. The mean age of onset of CD was 30 years (range 5-79 years). Abdominal pain (88.6 %) and diarrhea (77.1 %) were the most common presenting symptoms.
Conclusion: Crohn's disease, although still uncommon in Iran, is not as rare as previously thought and appears to be rapidly increasing. Gastroenterologists and surgeons should have a higher index of suspicion for this disease in socio-economic regions of the developing world.
Im J Med Sci 2000; 25(3&4):138-143.

Key Words: • Crohn's Disease • Inflammatory bowel disease • Iran

Increasing IBD in Iran



IBD crude incidence rate 1990-2010 for men & women



Non statistically significant difference

IBD in Iran 2016

Original Article

Emerging Epidemic of Inflammatory Bowel Disease in a Middle Income Country: A Nation-wide Study from Iran

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Abstract

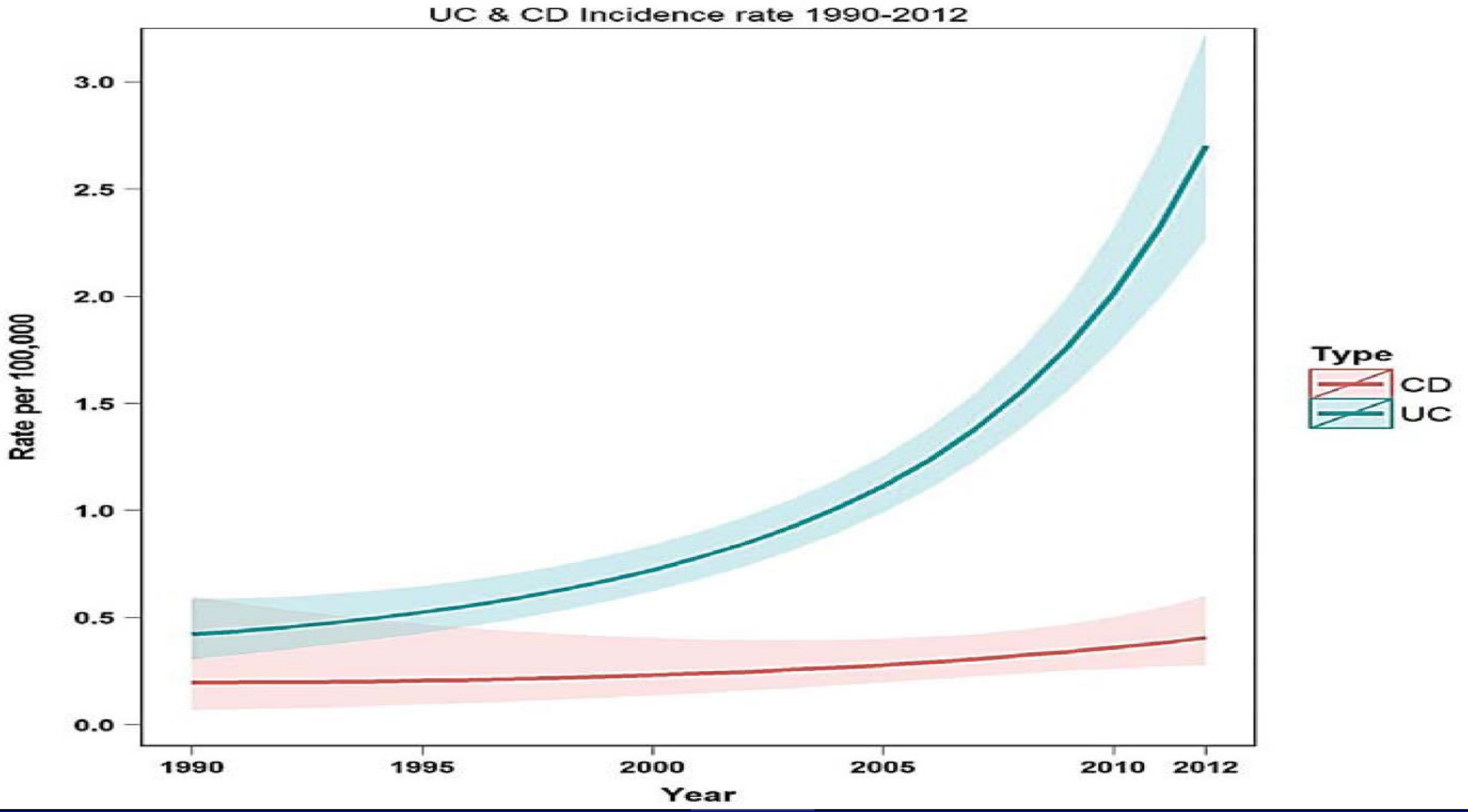
Background: The burden of inflammatory bowel disease (IBD) hasn't been reported in Iran. We aimed to estimate the prevalence and incidence of IBD and its trend in Iran at national and subnational level from 1990 to 2012.

Methods: We conducted a systematic review of English and Persian databases about the epidemiology of IBD. We also collected outpatient data from 17 provinces of Iran using almost all public and private referral gastroenterology clinics. Prevalence and incidence rate was calculated at national and subnational levels. The Kriging method was used to extrapolate provinces with missing data and GPR model to calculate time trends of rates at subnational level.

Results: We found 16 case series, two population-based studies, and two review articles. We collected 11,000 IBD cases from outpatient databases. Among them, 9,269 (84.26%) had ulcerative colitis (UC), 1,646 (14.96%) had Crohn's disease (CD), and 85 had intermediate colitis (IC). A total of 5,452 (49.56%) patients were male. Mean age at diagnosis was 32.80 years (CI: 13 – 61) for UC and 29.98 years (CI: 11 – 58) for CD. Annual incidences of IBD, UC, and CD in 2012 were 3.11, 2.70, and 0.41 per 100,000 subjects respectively. Prevalence of

IBD population in Iran 2025

- An estimated 0.1 % Iranian have IBD (80,000)


UC & CD Incidence rate 1990-2012
Rate per 100,000
3.0
2.5
2.0
1.5
1.0
0.5
0.0
1990
1995
2000
2005
2010
2012
Year
Type
CD
UC

What is the etiology!?

Environmental risk factor for IBD

- **Western Type Diet**
- Cleaner environment (the hygiene hypothesis)
- Antibiotics use during Childhood
- Nonsteroidal anti-inflammatory drugs,
- Smoking
- Cesarean section delivery.
- Lack of breastfeeding.
- Non-exposure to farm animals.
- **Early plastic water bottle use**

In Iran IBD is associated with exposure to domestic refrigeration, among other household factors, during childhood.

OPEN ACCESS Freely available online

PLoS one

Crohn's Disease and Early Exposure to Domestic Refrigeration

Fatemeh Malekzadeh[1], Corinne Alberti[2,3], Mehdi Nouraei[1], Homayoon Vahedi[1], Isabelle Zaccaria[2,3], Ulrich Meinzer[4,5,6], Siavosh Nasseri-Moghaddam[1], Rasoul Sotoudehmanesh[1], Sara Momenzadeh[1], Reza Khaleghnejad[1], Shahrooz Rashtak[1], Golrokh Olfati[1], Reza Malekzadeh[1], Jean-Pierre Hugot[4,5,6]*

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Abstract

Background: Environmental risk factors playing a causative role in Crohn's Disease (CD) remain largely unknown. Recently, it has been suggested that refrigerated food could be involved in disease development. We thus conducted a pilot case control study to explore the association of CD with the exposure to domestic refrigeration in childhood.

Methodology/Principal Findings: Using a standard questionnaire we interviewed 199 CD cases and 207 age-matched patients with irritable bowel syndrome (IBS) as controls. Cases and controls were followed by the same gastroenterologists of tertiary referral clinics in Tehran, Iran. The questionnaire focused on the date of the first acquisition of home refrigerator and freezer. Data were analysed by a multivariate logistic model. The current age was in average 34 years in CD cases and the percentage of females in the case and control groups were respectively 48.3% and 63.7%. Patients were exposed earlier than controls to the refrigerator ($X2 = 9.9$, $df = 3$, $P = 0.04$) and refrigerator exposure at birth was found to be a risk factor for CD (OR = 2.08 (95% CI: 1.01–4.29), $P = 0.05$). Comparable results were obtained looking for the exposure to freezer at home. Finally, among the other recorded items reflecting the hygiene and comfort at home, we also found personal television, car and washing machine associated with CD.

Conclusion: This study supports the opinion that CD is associated with exposure to domestic refrigeration, among other household factors, during childhood.

January 2009 | Volume 4 | Issue 1 | e4288

Western Diet may be the Culprint

- A popular ingredient in the **Western diet** has been linked to UC.
- The ingredient is **soybean oil**, (روغن سویا) which is **very common in processed foods**.
- Western country per capita consumption of soybean oil **increased more than 1,000-fold during the 20thcentury.**
- Mice fed a diet high in soybean oil were more at risk of developing colitis.
- Linoleic acid, an omega-6 fatty acid that comprises up to 60% of soybean oil.
- **Endocannabinoids** a lipid-based molecules that help block inflammation in bowel. Soybean oil decrease in endocannabinoids

Soybean oil with high content of LA increases susceptibility to IBD via microbial and host-initiated pathways

OPEN ACCESS Check for updates

Diet high in linoleic acid dysregulates the intestinal endocannabinoid system and increases susceptibility to colitis in Mice

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[a]Department of Molecular, Cell and Systems Biology, University of California, Riverside, CA, USA; [b]Department of Microbiology and Plant Pathology, University of California, Riverside, CA, USA; [c]Division of Biomedical Sciences, University of California, Riverside, CA, USA; [d]West Coast Metabolomics Center, Genome and Biological Sciences Facility, University of California Davis, Davis, CA, USA; [e]United States Department of Agriculture, Agricultural Research Service, Western Human Nutrition Research Center, Davis, CA, USA

ABSTRACT

Inflammatory bowel disease (IBD) is a multifactorial disease with increasing incidence in the U.S. suggesting that environmental factors, including diet, are involved. It has been suggested that excessive consumption of linoleic acid (LA, C18:2 omega-6), which must be obtained from the diet, may promote the development of IBD in humans. To demonstrate a causal link between LA and IBD, we show that a high fat diet (HFD) based on soybean oil (SO), which is comprised of ~55% LA, increases susceptibility to colitis in several models, including IBD-susceptible IL10 knockout mice. This effect was not observed with low-LA HFDs derived from genetically modified soybean oil or olive oil. The conventional SO HFD causes classical IBD symptoms including immune dysfunction, increased intestinal epithelial barrier permeability, and disruption of the balance of isoforms from the IBD susceptibility gene Hepatocyte Nuclear Factor 4α (HNF4α). The SO HFD causes gut dysbiosis, including increased abundance of an endogenous adherent invasive *Escherichia coli* (AIEC), which can use LA as a carbon source. Metabolomic analysis shows that in the mouse gut, even in the absence of bacteria, the presence of soybean oil increases levels of LA, oxylipins and prostaglandins. Many compounds in the endocannabinoid system, which are protective against IBD, are decreased by SO both *in vivo* and *in vitro*. These results indicate that a high LA diet increases susceptibility to colitis via microbial and host-initiated pathways involving alterations in the balance of bioactive metabolites of omega-6 and omega-3 polyunsaturated fatty acids, as well as HNF4α isoforms.

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KEYWORDS
IBD; PUFAs; soybean oil; olive oil; oxylipins; adherent invasive E.Coli; HNF4α; gut microbiome; metabolomics; epithelial barrier function

Diet Microbiota IBD

- Over the last century there has been a shift in the composition of the Western diet with **soybean oil (SO)** being the component that has increased the most, paralleling the increased incidence of IBD .
- While soybean oil is comprised of ~**55%** **linoleic acid** (LA, C18:2 ω6), an essential fatty acid, only 1–2% kcal of this polyunsaturated fatty acid (PUFA) is required in the human diet.



Changes in the Gut Microbiome

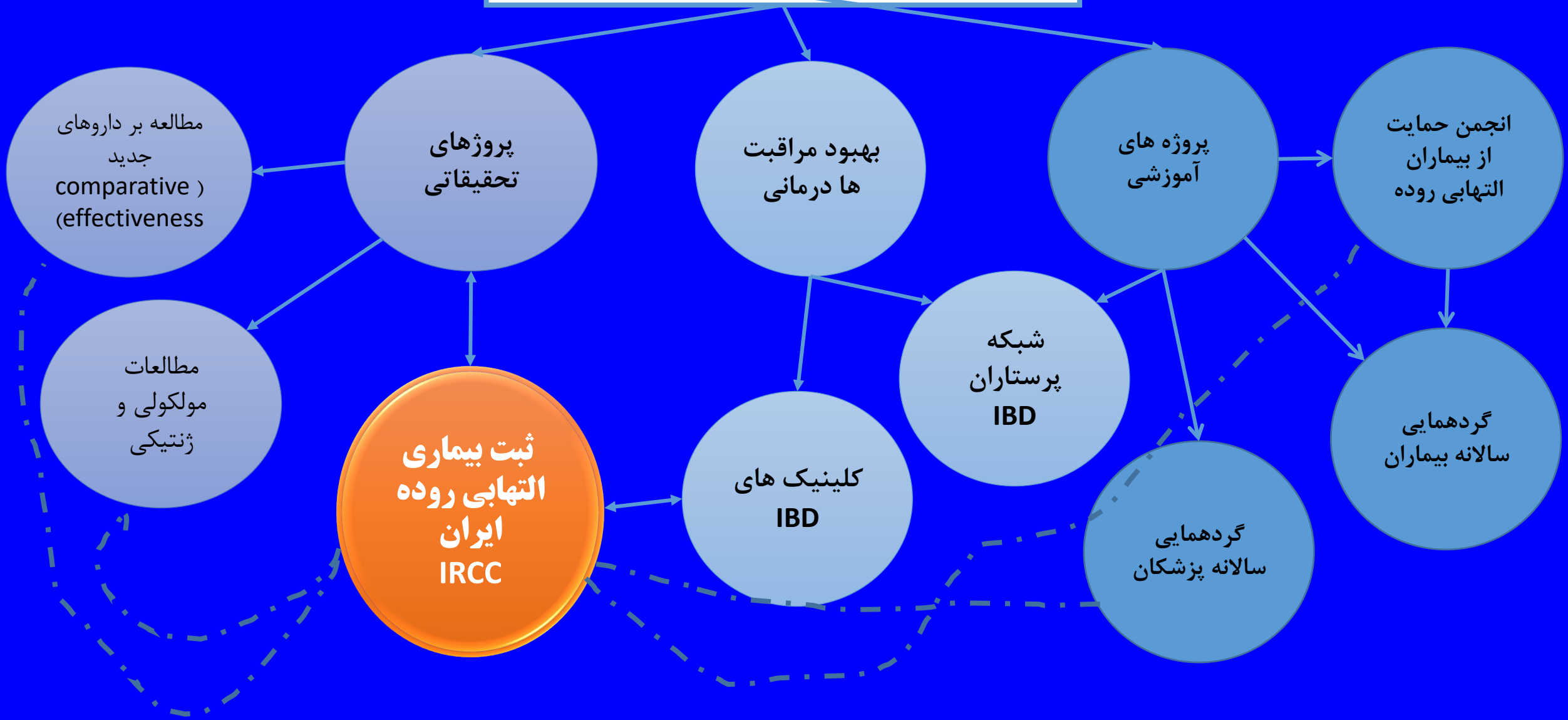
- The gut microbiome showed **increased amounts of adherent invasive E. coli** , a type of bacteria that grows by using linoleic acid as a carbon source and increased levels of oxylipins and **deceasing Lactobacilli population**
- **Lactobicila Bacteria made endocannabinoids**
- Linoleic acid binds to a protein known as HNF-4α. Disrupting the expression of this protein can weaken the intestinal barrier, letting toxins flow into the body.
- Endocannabinoids are being explored as "a potential therapy for treating IBD symptoms

IBD in Iran

Data obtained from 11000 patients IRCC registry

IBD Iran		
Parameter	**Number**	**%**
Number of registered patients	11000 patients	
Gender Male/ Female	 5399 / 4766	53.1% 46.9
Age onset ≥60 years	982 patients	9.7%
Age onset ≤ 17 years	212 patients	2.1%
Mean age at diagnosis Min-Max	40 years 2-91 years	

شبکه ملی تحقیقات بیماری التهابی روده



Iranian Registry of Crohn's and colitis

ORIGINAL ARTICLE

INTESTINAL RESEARCH

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Intest Res 2019;17(3):330-339

Iranian Registry of Crohn's and Colitis: study profile of first nation-wide inflammatory bowel disease registry in Middle East

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Background/Aims: A recent study revealed increasing incidence and prevalence of inflammatory bowel disease (IBD) in Iran. The Iranian Registry of Crohn's and Colitis (IRCC) was designed recently to answer the needs. We reported the design, methods of data collection, and aims of IRCC in this paper. **Methods:** IRCC is a multicenter prospective registry, which is established with collaboration of more than 100 gastroenterologists from different provinces of Iran. Minimum data set for IRCC was defined according to an international consensus on standard set of outcomes for IBD. A pilot feasibility study was performed on 553 IBD patients with a web-based questionnaire. The reliability of questionnaire evaluated by Cronbach's α. **Results:** All sections of questionnaire had Cronbach's α of more than 0.6. In pilot study, 312 of participants (56.4%) were male and mean age was 38 years (standard deviation = 12.8) and 378 patients (68.35%) had ulcerative colitis, 303 subjects (54,7%) had college education and 358 patients (64.74%) were of Fars ethnicity. We found that 68 (12.3%), 44 (7.9%), and 13 (2.3%) of participants were smokers, hookah and opium users, respectively. History of appendectomy was reported in 58 of patients (10.48%). The most common medication was 5-aminosalicylate (94.39%). **Conclusions:** To the best of our knowledge, IRCC is the first national IBD registry in the Middle East and could become a reliable infrastructure for national and international research on IBD. IRCC will improve the quality of care of IBD patients and provide national information for policy makers to better plan for controlling IBD in Iran. **(Intest Res 2019;17:330-339)**

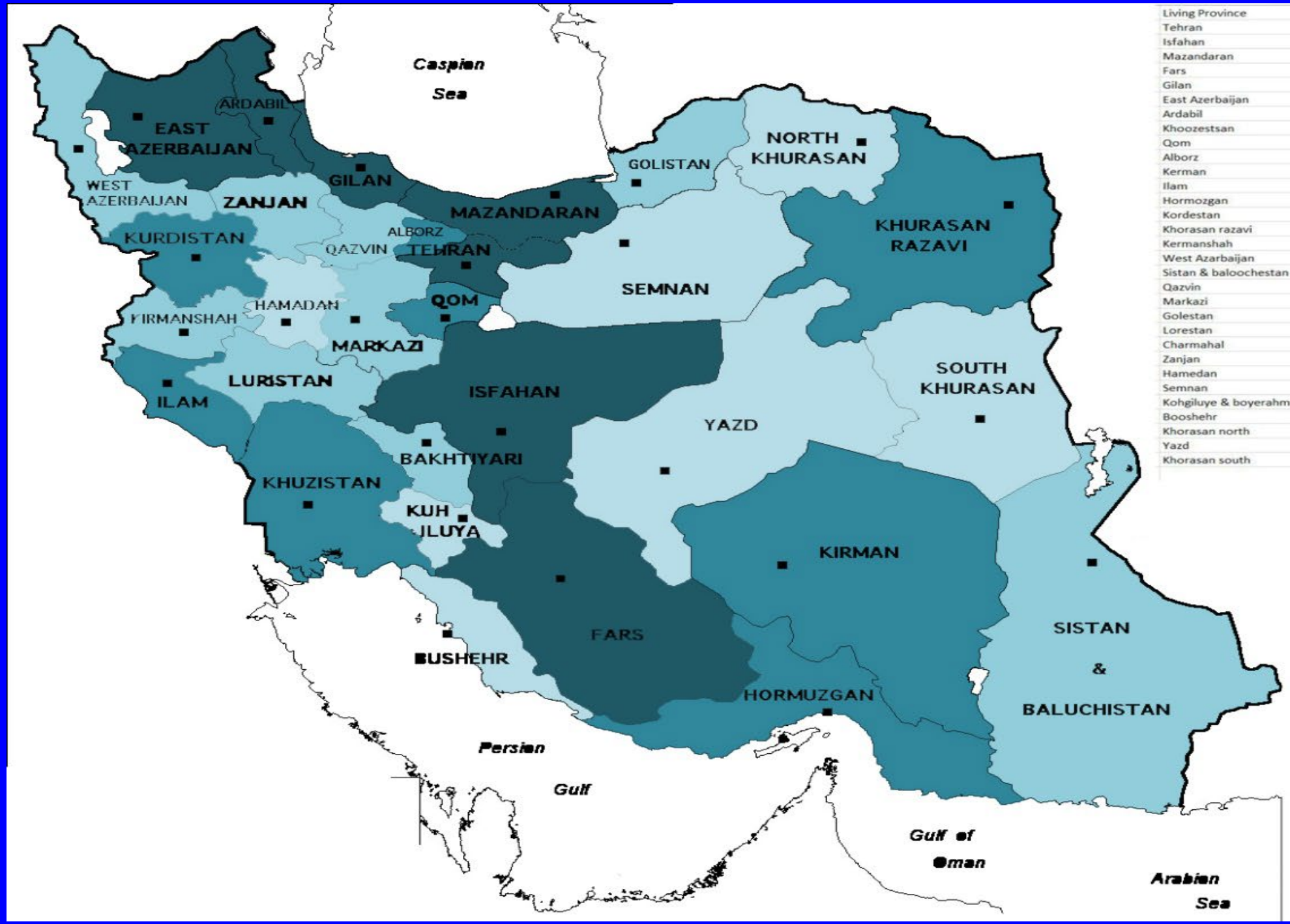
Key Words: Inflammatory bowel disease; Registries; Iran

جلسه با متخصصین گوارش استان یزد



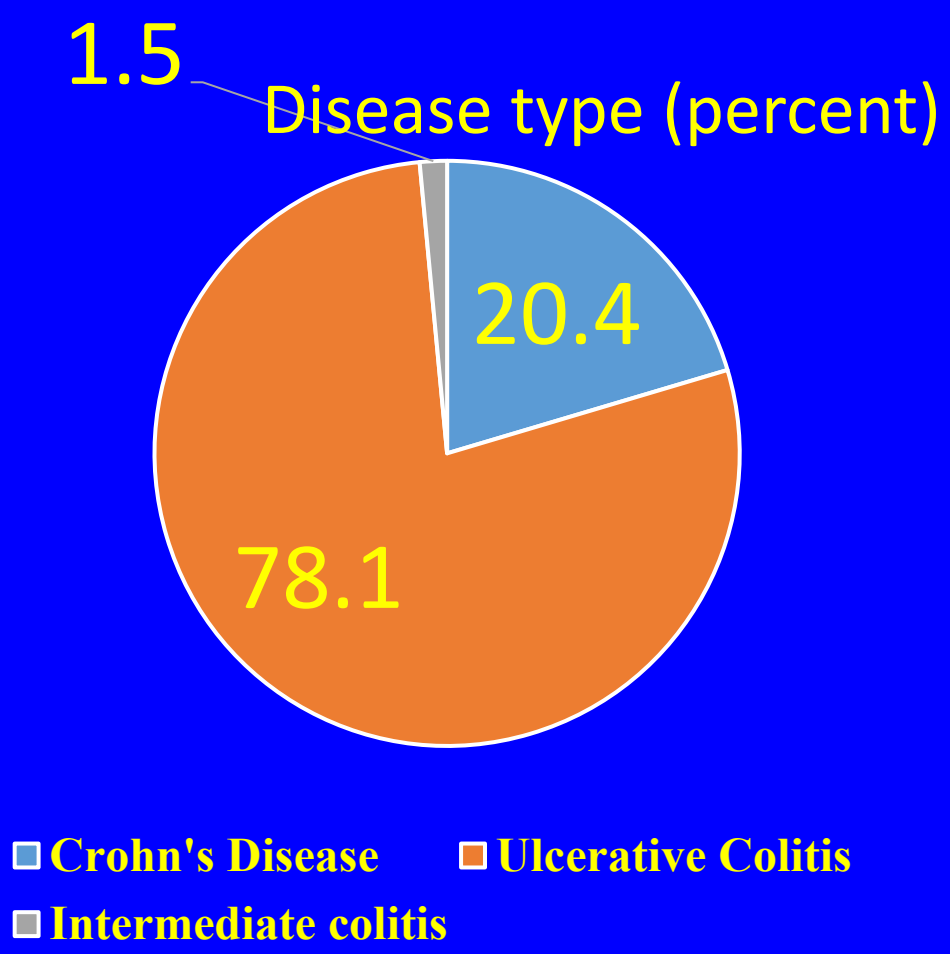
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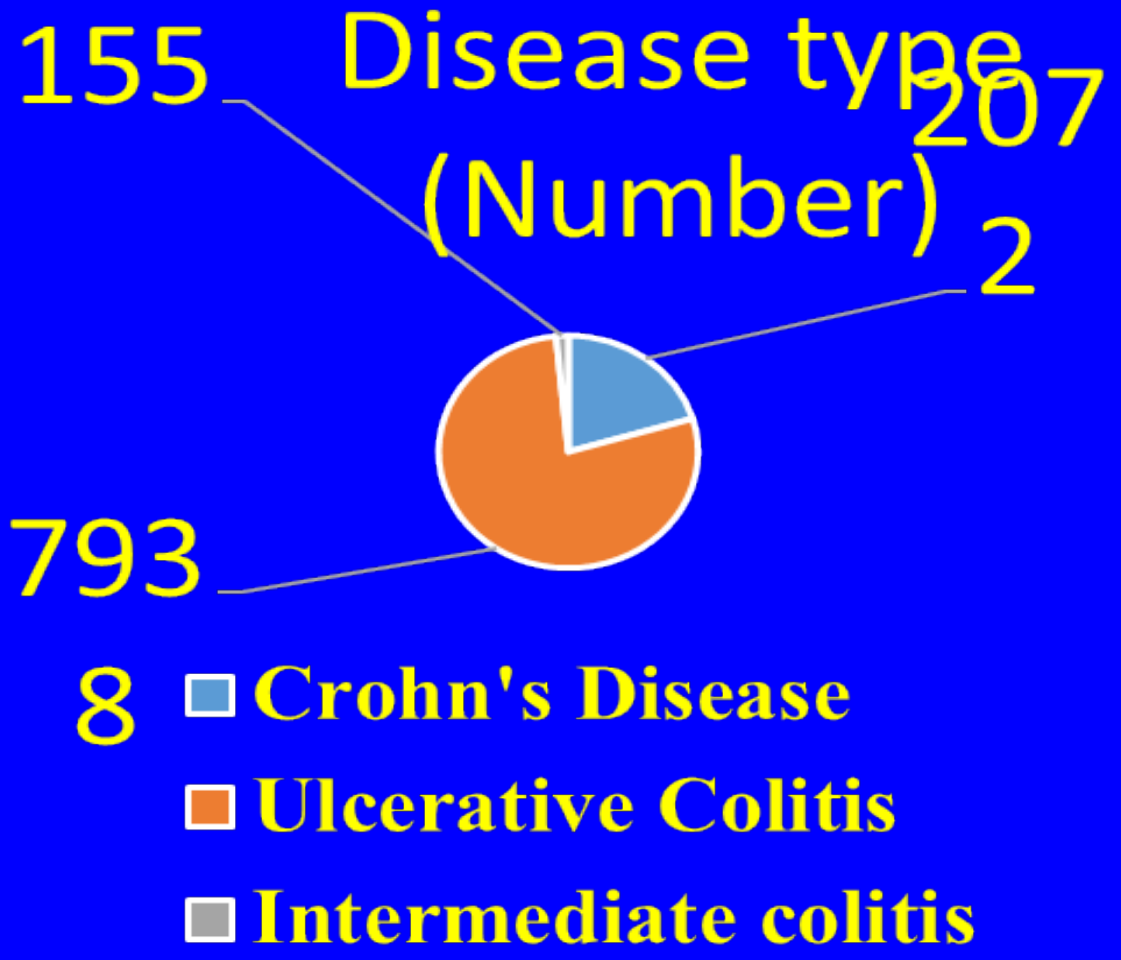




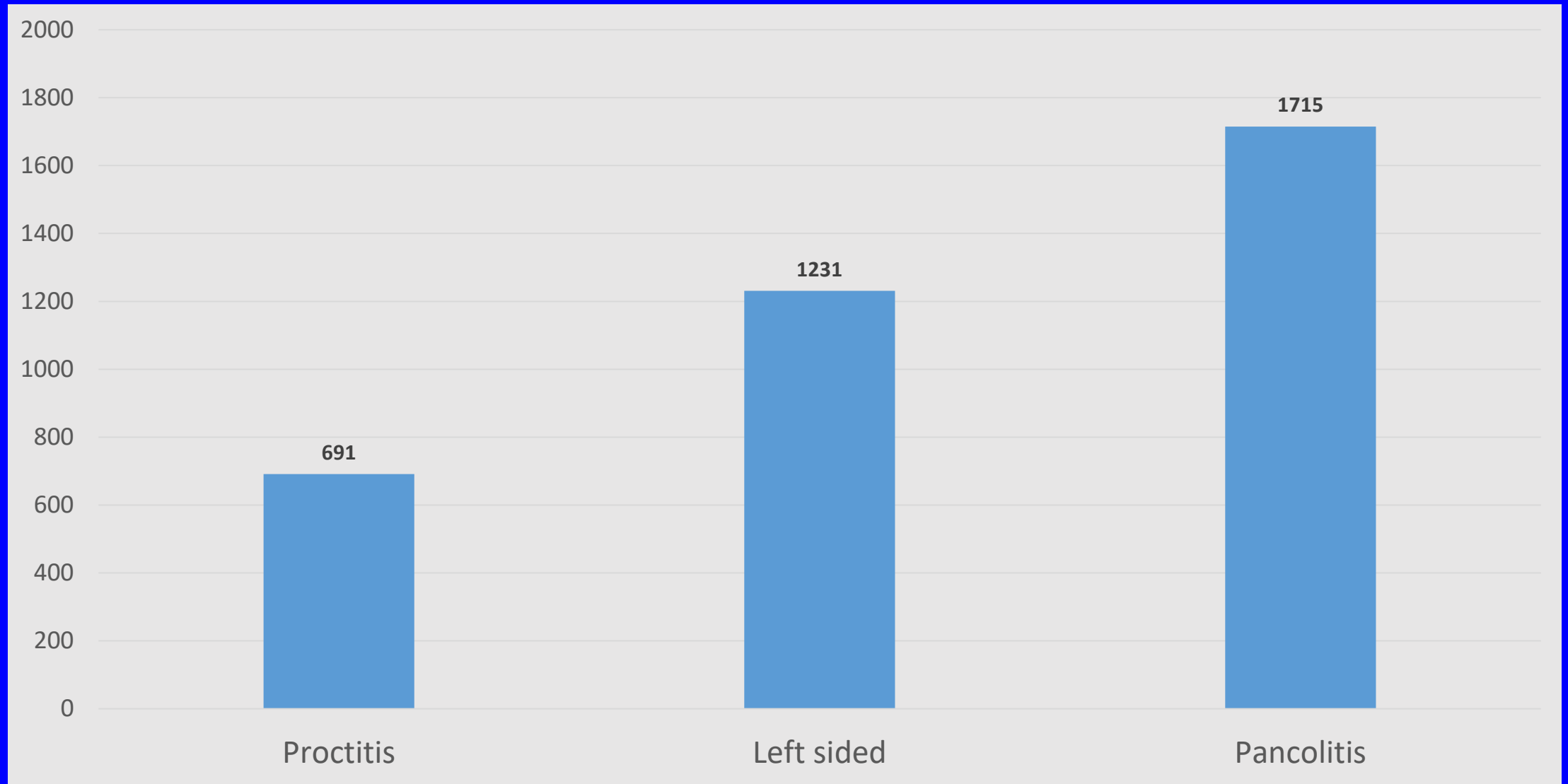
Living Province	Freq.	Percent	percintile
Tehran	959	24.99	90
Isfahan	432	11.26	
Mazandaran	420	10.95	
Fars	354	9.23	
Gilan	193	5.03	
East Azerbaijan	176	4.59	
Ardabil	158	4.12	
Khoozestsan	127	3.31	75
Qom	113	2.95	
Alborz	101	2.63	
Kerman	96	2.5	
Ilam	95	2.48	
Hormozgan	95	2.48	
Kordestan	80	2.08	
Khorasan razavi	61	1.59	
Kermanshah	50	1.3	50
West Azarbaijan	45	1.17	
Sistan & baloochestan	37	0.96	
Qazvin	37	0.96	
Markazi	37	0.96	
Golestan	29	0.76	
Lorestan	25	0.65	
Charmahal	22	0.57	
Zanjan	20	0.52	
Hamedan	20	0.52	25
Semnan	17	0.44	
Kohgiluye & boyerahmad	11	0.29	
Booshehr	10	0.26	
Khorasan north	9	0.23	
Yazd	6	0.16	
Khorasan south	2	0.05	

IBD in Iran 78% UC

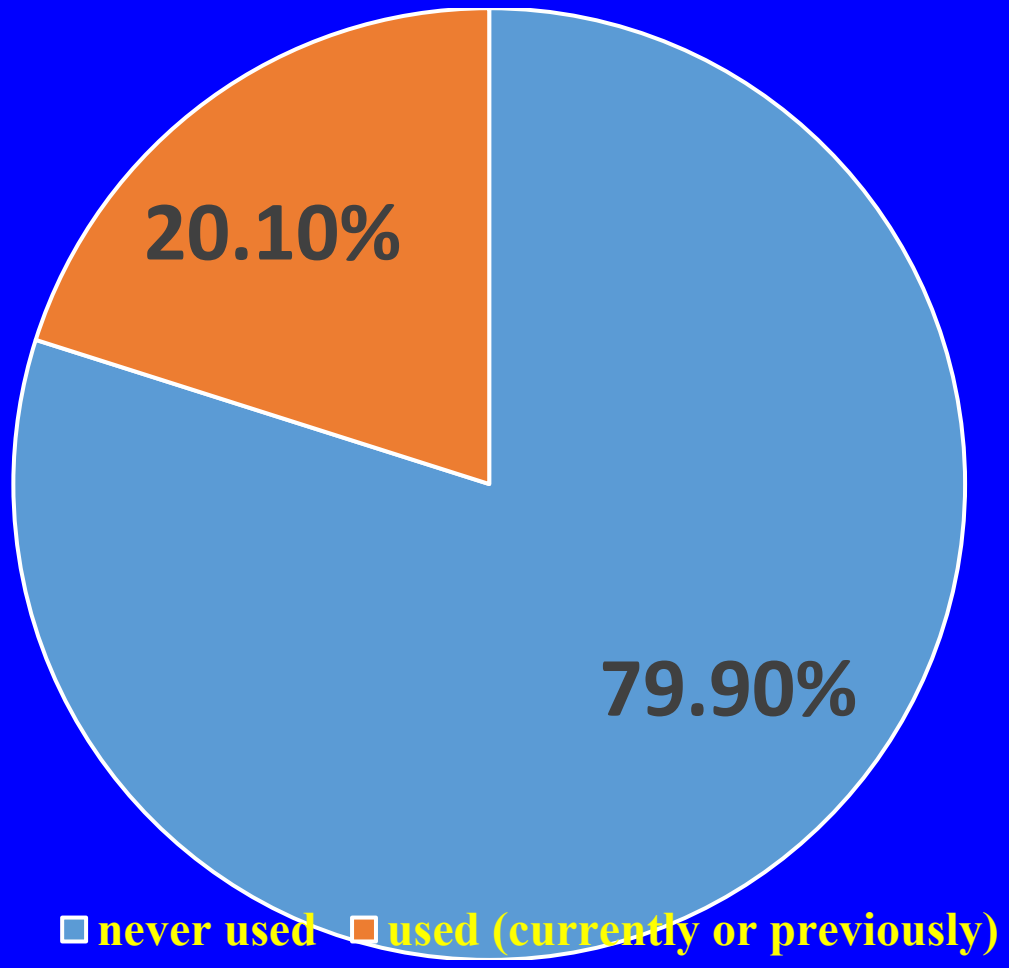




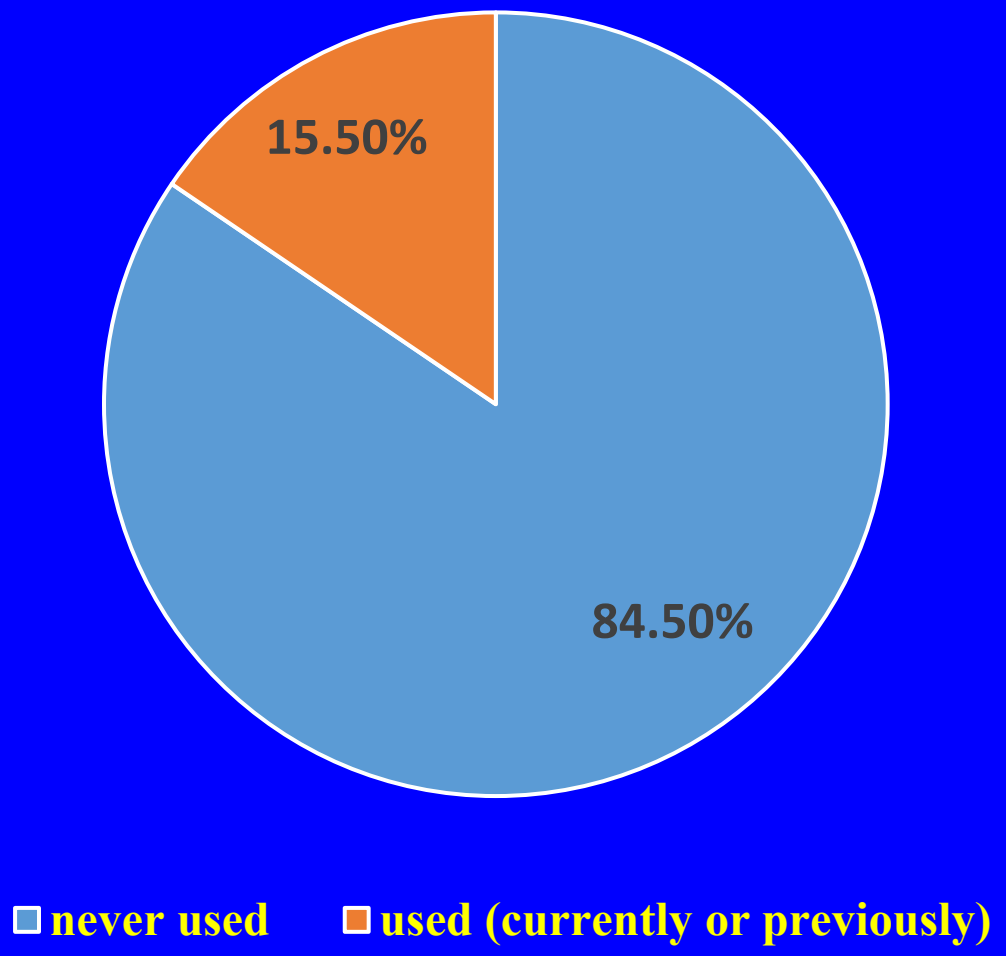
IBD in Iran
Disease Extension in IRCC UC patients



Biologic Therapy in IRCC



Biologic Therapy in Ulcerative Colitis in IRCC



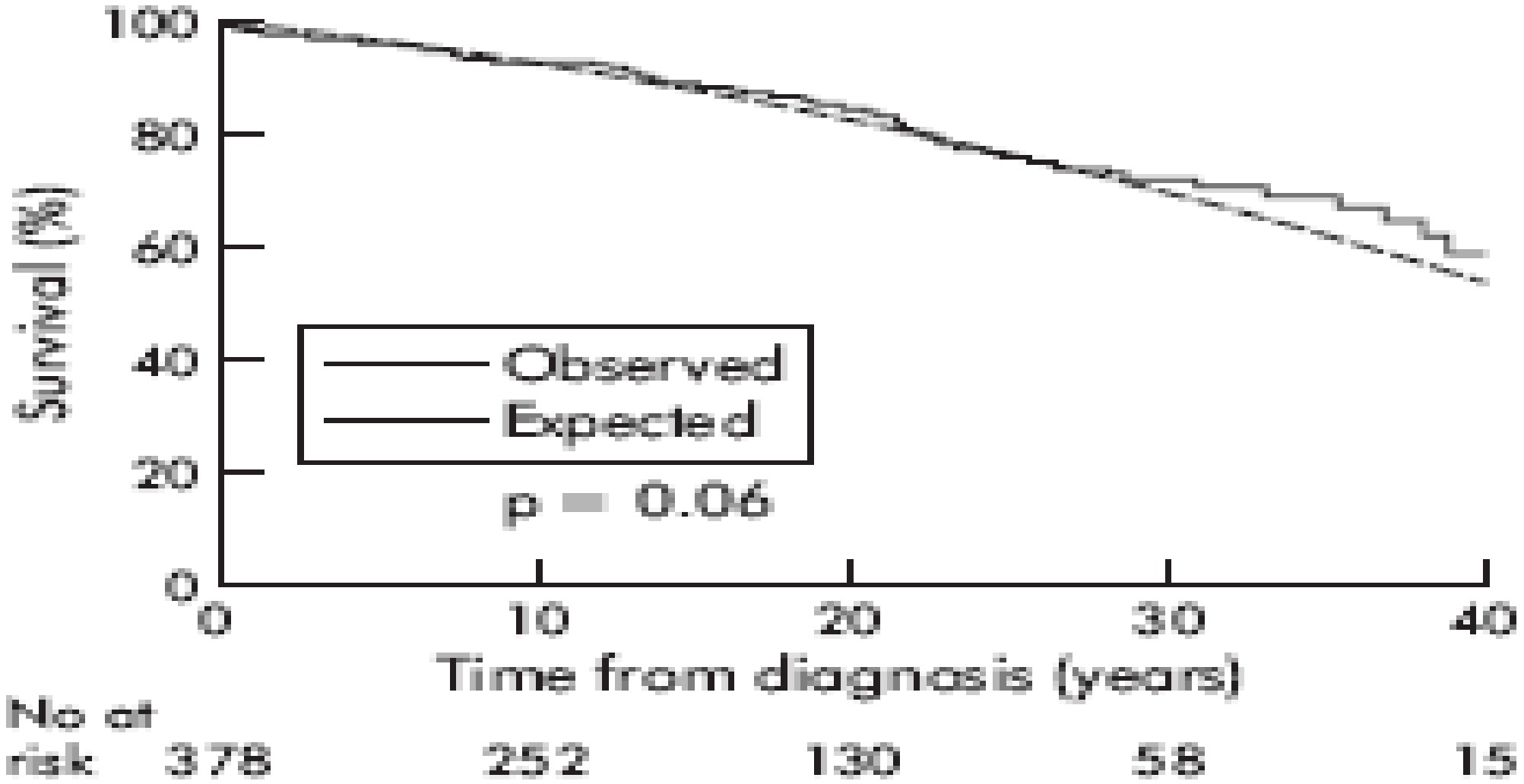
We need to be prepared

- Countries in which IBD incidence is increasing will need to Prepare their clinical infrastructure and personnel to manage this complex and costly disease

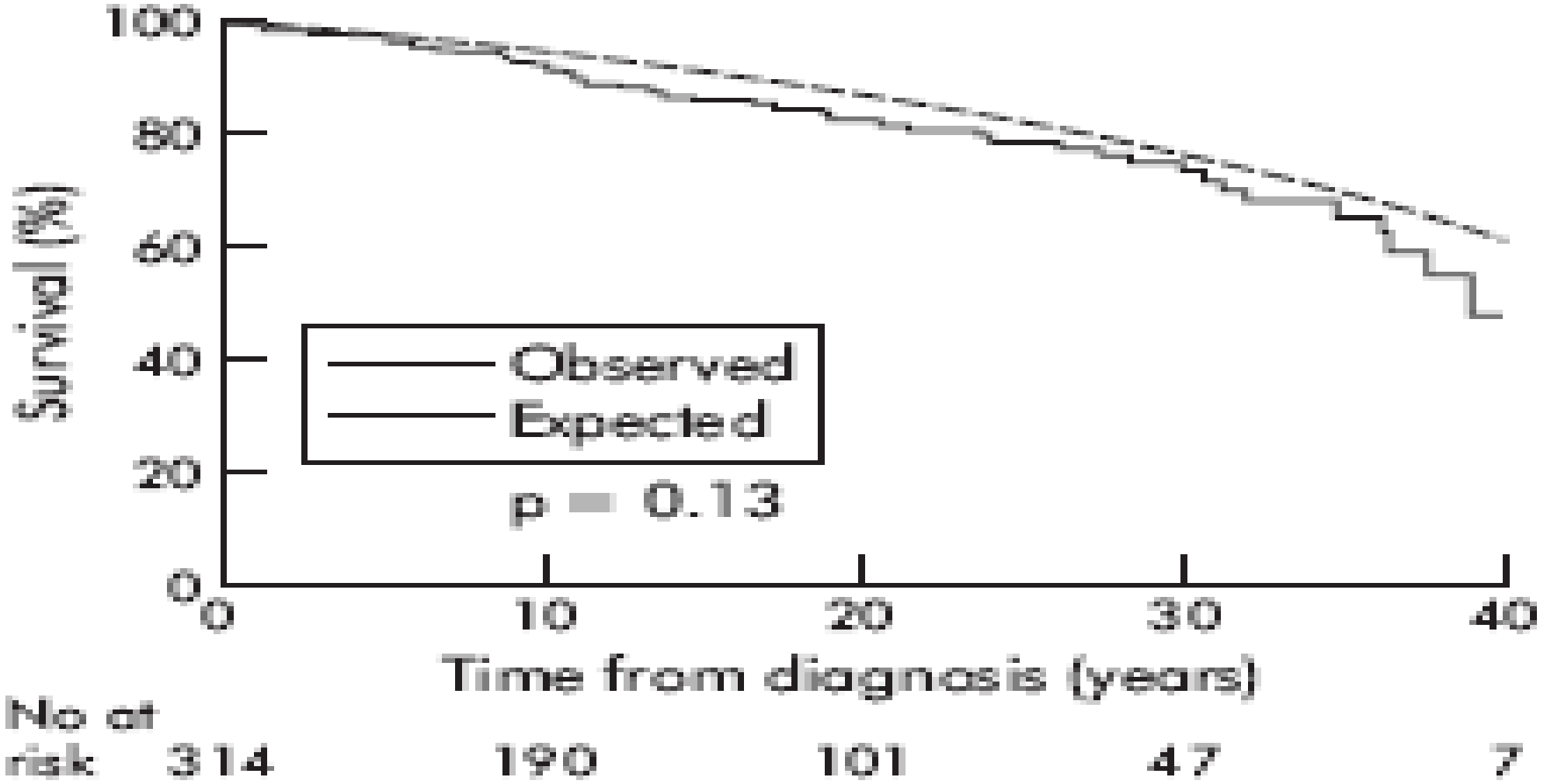
Clinical Course of IBD

- Median age at diagnosis of CD is 27 years.
- The course of IBD may last more than 50 years.
- IBD manifestations are often quite active during the early few years before subsequently resolving and becoming more stable
- Surgery may results in long period of quiescent disease

Observed and expected cumulative survival from time in 378 Minnesota residents with **ulcerative colitis** diagnosed in 1940–2004



Observed and expected cumulative survival from time of diagnosis in 314 Olmsted County, Minnesota, residents with Crohn's disease diagnosed in 1940–2004 (log rank, p = 0.13).



Comprehensive care of the IBD patients

- Comprehensive care of the IBD patients involves a thoughtful, individualized, and well-rounded assessment and treatment plan, taking into consideration feedback from the patient.

- **Early diagnosis and early management of IBDs** are critical to minimizing complications and ensuring positive outcomes.

- Selection of **appropriate first-line therapy** should be based on risk assessment, disease activity, and clinical characteristics of the patient.

Don't Delay Biologic Therapy

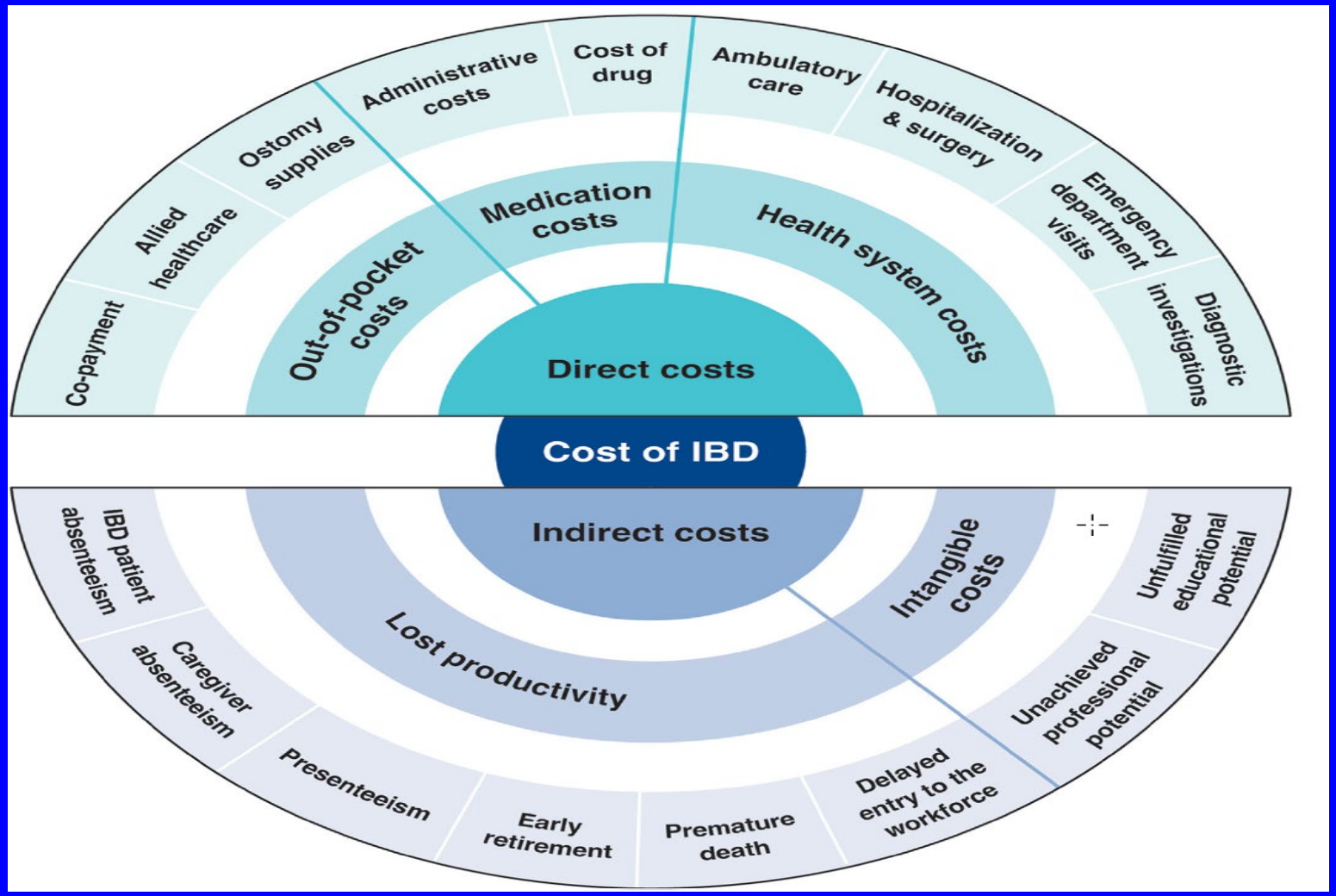
- Hospitalizations, 33.7% versus 65.2% ($P<0.001$)
- ER visits, 32.1% versus 63.9% ($P<0.001$);
- Surgery, 29.9% versus 57.0% ($P<0.001$); and
- Steroid use, 8.7% versus 13.9% ($P<0.001$)

30%IBD Patients who respond to biologics Stops Biologic Therapy Within 18 Months

- Secondary loss of response, particularly due to antibody formation, remains a critical issue in the long-term effectiveness and durability of biologic therapy for the treatment of Crohn's disease and ulcerative colitis.

- Loss of response to treatment was the most common reason for discontinuation (31%), followed by side effects (23%) and initial lack of response during induction therapy (primary nonresponse; 21%).

Overall cost of IBD care based on domains of direct and indirect costs.



Direct Health care expenses

- The **rising global prevalence** of inflammatory bowel diseases (IBDs), such as Crohn's disease and ulcerative colitis, underscores the need to examine current and future IBD care costs.
- Direct health care expenses, including ambulatory visits, hospitalizations, and medications, are substantial, **averaging $9,000 to $12,000 per person annually** in high-income regions.
- These estimates do not fully account for factors such as disease severity, accessibility, and variability in health care infrastructure among regions.

International effort to summarize the cost of IBD in high-income regions

- The commission estimated that the mean annual direct per person health care cost in 2021 USD was **$12,000 for CC and $9,000 for UC.**
- These estimates do not even include disease duration (ie, first years of treatment are typically more expensive than later years), **disease severity and phenotypic differences** (i.e, a small percentage of patients contribute disproportionately to overall health care expenditures),
- Most published studies estimate **IBD cost in the era after anti-tumor necrosis factor (TNF) entry,** with limited data accounting for increased costs of newer advanced therapies or decreased costs of biosimilars

خدمات سلامت برای بیماران التهابی روده در ایران

- به طور خلاصه بیمار مبتلا به بیماری التهابی روده که برای اولین بار در سال اول تشخیص داده می شود حداقل به هفت نوبت ویزیت در سال، دو نوبت کولونوسکوپی همراه با نتایج پاتولوژی، یک نوبت تصویر برداری ام آر آی، و آزمایشات (به صورت متناوب) نیاز دارد.
- به طور متوسط هزینه هر بیمار مبتلا به بیماری التهابی روده **در سال حداقل ۱۰۰ میلیون تومان می باشد**

Annual cost of IBD in the U.S.

- The per-person annual estimates multiplied by local prevalence data govern annual budget impact analyses per region.
- For example, the most recent data from the United States (U.S.) estimated that the prevalence of IBD was 0.7% of the population, representing 2.39 million individuals living with IBD.
- Using the Cost Commission annual average, the annual cost of IBD in the U.S. approximates **$50 billion.**

Annual cost of IBD in CANADA

- Regions with specific mean annual estimates can compare their cost with the baseline average from the collective data of high-income settings derived from the Cost Commission.
- For example, the Crohn's and Colitis Canada 2023 IBD Impact report calculated that the average annual per person cost of IBD in Canada was $10,336 CDN, which translates into a total cost **of $3.3 billion CDN,** given the estimated prevalence of 0.8% (or 330,000 Canadians).

Cost shift from hospitalizations to costs of Medications

- All studies demonstrated a shift over time from costs associated with hospitalizations to costs of medications.
- In the pre-biologic era, hospitalizations and particularly surgery accounted for more than 50% of direct health care costs of IBD.
- In the pre-biologic era, over 60% of IBD-related costs in the U.S. were related to emergency department visits and hospitalizations, up to $25 billion

Indirect costs

- Indirect costs, predominantly stemming from loss in productivity due to absenteeism, presenteeism, and other intangible costs, further contribute to the financial burden of IBD.

- Despite efforts to quantify indirect costs, many aspects remain poorly understood, leading to an underestimation of their actual impact.

The cost of Absenteeism

- In Canada, approximately 150,000 adults were determined to be employed with IBD in 2023,3 leading to a budget impact analysis of $163 million lost annually to absenteeism

- In 2023, the Crohn's and Colitis Canada estimated that the indirect cost of IBD in Canada was $1.51 billion CDN based on absenteeism, presenteeism, unemployment, premature death, and caregiving costs.
-

Cost of loss of productivity in Sweden

- A national Swedish study used disability pension and sick leave to define the cost of loss of productivity, which estimated that employable adults with IBD cost society on average $22,000 and $14,000 USD in 2020 for CD and UC, respectively.
- Presenteeism, or working but not at full capacity, has been poorly studied,

Strategies for making IBD care sustainable include

- Early implementation of biologic therapies, focusing on cost effectiveness in settings with limited resources, and promoting the uptake of biosimilars to reduce direct costs.

- Addressing the increasing financial burden of IBD requires a comprehensive approach that tackles disparities, enhances access to cost-effective therapeutics, and promotes collaborative efforts across health care systems.

- Embracing innovative strategies can pave the way for personalized, cost-effective care accessible to all individuals with IBD, ensuring better outcomes and sustainability.

The most common reasons for untimely care were :

- Patients couldn’t get an appointment when needed (39%).
- Awaiting insurance approval (26%),
- Unable to reach the clinic over the phone (19%),
-
- Too busy with work or other commitments (19%).

New concepts have emerged in the management of IBD such as:

- **Treat to target.**
- **Early intervention,**
- **Tight control**
- **Disease monitoring.**
- **Personalization .**
- **Prevention.**

We Should be up to date in IBE therapy and IBD care

- Spent time with IBD patients.
- Listen to them and talk with them.
- Should be supportive
- Enjoy helping and curing your IBD patients

Monitoring clinically asymptomatic patients

- In patients with IBD who have reached clinical and biochemical remission, monitoring is aimed at early recognition of a disease flare .
- The interval of monitoring should be between 3 to 6 months depending upon duration of remission and current therapy .

- Relapse can be detected with FC before clinical symptoms .

Treat to Target

- **Switching the target from clinical remission to endoscopic healing** has mainly been supported by post-hoc analysis of clinical trials.
- In the step-up/top-down study of patients with CD, complete endoscopic healing (defined as a simple endoscopic score of 0) after 2 years of therapy was the only factor that predicted sustained, steroid-free remission at 3 and 4 years after therapy was initiated.

Tight Control and Monitoring

- **Levels of fecal calprotectin (FCP)** better-predicted relapse than levels of CRP, but combined measurement of both markers most accurately predicted relapse of patients with CD. Pharmacokinetic evaluations have been used mostly for patients losing response to maintenance therapy.

- Panel of international experts recommended the assessment of anti-TNF drug and antibody concentrations at the end of induction therapy in primary non-responders, in secondary nonresponders, and after a drug holiday.

Other Shortcomings

- Treating too late
- Not optimizing therapies
- Allowing immunogenicity
- Using ineffective drugs
- Not fully inducing remission
- Using 5ASA in Crohn's

Importance of psychological ,physician ,family and social support

- There is increasing evidence, from experimental models and clinical studies, that the brain-gut axis plays an important role in IBD.
- We should not overlook chronic pain, anxiety, depression, and sleep disorders which can strongly impact the quality of life of our patients and increase healthcare utilization
- We should talk with IBD patients reassure them of cure and normal life span ,accommodate specialized personnel who apply behavioral interventions and/or prescribed psychotropic medications when needed

IBD care is important burden on health care system

- The widening landscape of effective **biologic and small molecule** agents has shifted IBD management toward early, aggressive treatment and treat-to-target approaches.
- These trends place **increasing burdens on health care systems** and require the development of strategies that ensure the equitable, affordable, and sustainable delivery of IBD care.

Challenges in Achieving Cost Sustainability

- Disparities in access to care and treatment affordability.
- Limited access to cost effective treatment options.
- Lack of standardized guidelines for cost-effective care delivery.
- Underinsurance can significantly impact the quality of care and lead to difficulties in affording necessary treatments.

Financial toxicity with non-adherence to medication

- A study from Canada showed that individuals of lower SES encountered higher rates of hospitalization, prolonged hospital stays, and increased mortality rates, despite comparable access to IBD-specific medications.

- Studies from the U.S. and the United Kingdom found that people of color were less likely to be prescribed infliximab.

Lack of adequate social support

- A U.S. study found that 1 in 8 patients with IBD had food insecurity and lacked adequate social support, which was associated negatively with unplanned health care utilization.
- Low income conveys an increased risk of not being able to access timely and effective care, to the detriment of long-term health, disease prognosis, and overall cost.

Strategies for cost reduction in the clinical treatment of IBD.

Strategies for making IBD care sustainable

- Early implementation of biologic therapies
- Achievement of deep, endoscopic remission
- Early treat-to-target paradigms lead to durable,
- Steroid-free remission and improved disease outcomes
- Good adherence to Medication
- Regular follow up

نمونه بسته خدمتی برای بیمار مبتلا به بیمای التهابی روده

خدمت	تناوب خدمت در سال
مشاوره متخصص و فوق تخصص (روان پزشک، چشم، روماتولوژیست، تغذیه،--)	بر حسب نیاز
ویزیت فوق تخصص گوارش	۴-۳
رادیولوژی	یک تا دو بار
CT, MRI	یک بار
اندوسکوپی	بر حسب نیاز
کولونوسکوپی	۳-۲ بار
آزمایشات ویژه بیماری های التهابی روده	۶-۲ بار
بستری های مرتبط	بر حسب نیاز
آسیب شناسی تشخیصی(پاتولوژی)	۳-۲ بار
داروها	بر حسب نیاز
هزینه های تزریق	بر حسب نیاز

نمونه از هزینه های بالا

- آزمایش ایگرا:4،200،000 تومان
- آزمایش کالپروتکتین: 1،200،000 تومان



انجمن حمایت از بیماران التهابی روده

موسسه: غیر تجاری

سطح: ملی

تاریخ ثبت: اردیبهشت ماه ۱۳۹۹

شماره ثبت: ۴۹۵۶۴

شناسه ملی:۱۴۰۰۹۱۲۰۰۸۴

اهداف اصلی انجمن :

- ارایه خدمات آموزشی به بیماران التهابی روده وخانواده آنها
- آگاه سازی افکار عمومی در مورد بیماری التهابی روده و موضوعات مرتبط آنها
- تشویق و حمایت از انجام مطالعات علمی در مورد بیماری التهابی روده از طریق مراکز تحقیقاتی گوارش
- تلاش در جهت ایجاد ارتباط با دستگاههای مربوط جهت فراهم آوردن شرایط مناسب رفاهی بیماران التهابی روده
- حمایت از بیماران کم بضاعت
- تلاش در جهت جلب حمایت های مالی و معنوی از طریق جذب خیرین نهادهای دولتی و غیر دولتی

انجمن حمایت از بیماران التهابی روده

- ثبت بیماران التهابی روده در سطح کشور
- تفاهم نامه با سایر دانشگاه های علوم پزشکی کشور
  - شناسایی مشکلات در سطح ملی
  - ثبت در سطح ملی
  - استفاده از ظرفیت های سایر مراکز
- برگزاری جلسات آموزشی برای بیماران با حضور اساتید (حضوری و وبینار)
  - برگزاری بیش از ۱۰ جلسه آموزشی - حضوری و غیر حضوری- با حضور اساتید برجسته
  - پاسخ به سوالات بیماران به صورت فردی

انجمن حمایت از بیماران التهابی روده

- انجام مطالعات
  - در دسترس قراردادن دارو
  - پایش بیماری در طول دوره بدون داشتن هزینه برای بیمار
  - دسترسی دائم به پزشک
- تهیه کتابچه ها و پمفلت های آموزشی
  - وب سایت، کتابچه، پمفلت
  - بهره گرفتن از مطالب علمی و بر اساس شواهد

انجمن حمایت از بیماران التهابی روده

- در اختیار گذاشتن برخی دارو ها: با شرکتهای مختلف دارویی جهت تامین برخی اقلام دارویی به صورت رایگان برای بیماران تفاهم به عمل آمد
  - مطالعات
  - تخفیف
  - دارو های مورد نیاز
  - دارو های مانند ودولیزوماب، اوزانیمود و اوپاداسیتینیب
- با اجرای طرح های پژوهشی و ارائه اطلاعات مورد نیاز ، شرکت های دارویی تشویق به تولید این دارو ها در داخل کشور شدند
- ایجاد کارزار از طریق انجمن برای ثبت بیماری التهابی روده به عنوان بیماری خاص
- در اولویت قرار گرفتن بیماران التهابی روده در زمان پاندمی کووید جهت تزریق واکسن
- تولید مستندات برای بیمه شدن یا تعلق دارو یار برای دارو های گران قیمت (دارو یار برای داروی توفاسیتینیب، بیمه شدن داروی آلپامونت)

انجمن حمایت از بیماران التهابی روده
کارهای انجام شده

- در اختیار گذاشتن برخی دارو ها: با شرکتهای مختلف دارویی جهت تامین برخی اقلام دارویی به صورت رایگان برای بیماران تفاهم به عمل آمد
- دارو های مانند ودولیزوماب، اوزانیمود و اوپاداسیتینیب
- با اجرای طرح های پژوهشی و ارائه اطلاعات مورد نیاز ، شرکت های دارویی تشویق به تولید این دارو ها در داخل کشور شدند
- **ایجاد کارزار از طریق انجمن برای ثبت بیماری التهابی روده به عنوان بیماری خاص**
- **دارو های مورد نیاز**
- در اولویت قرار گرفتن بیماران التهابی روده در زمان پاندمی کووید جهت تزریق واکسن
- تولید مستندات برای بیمه شدن یا تعلق دارو یار برای دارو های گران قیمت (دارو یار برای داروی توفاسیتینیب، بیمه شدن داروی آلپامونت)

با تشکر از توجه شما

