



Introduction

IBD is a collection of autoimmune diseases that cause inflammation in the gastrointestinal tract; ulcerative colitis and Crohn's disease are two common forms of IBD (Crohn's and Colitis UK, 2019).

Symptoms of IBD

Abdominal pain Diarrhoea Tiredness
 Bloody stool Inflamed eyes Joint pains

Figure 1: Common symptoms of IBD (Crohn's and Colitis UK, 2019).

The genetics of IBD

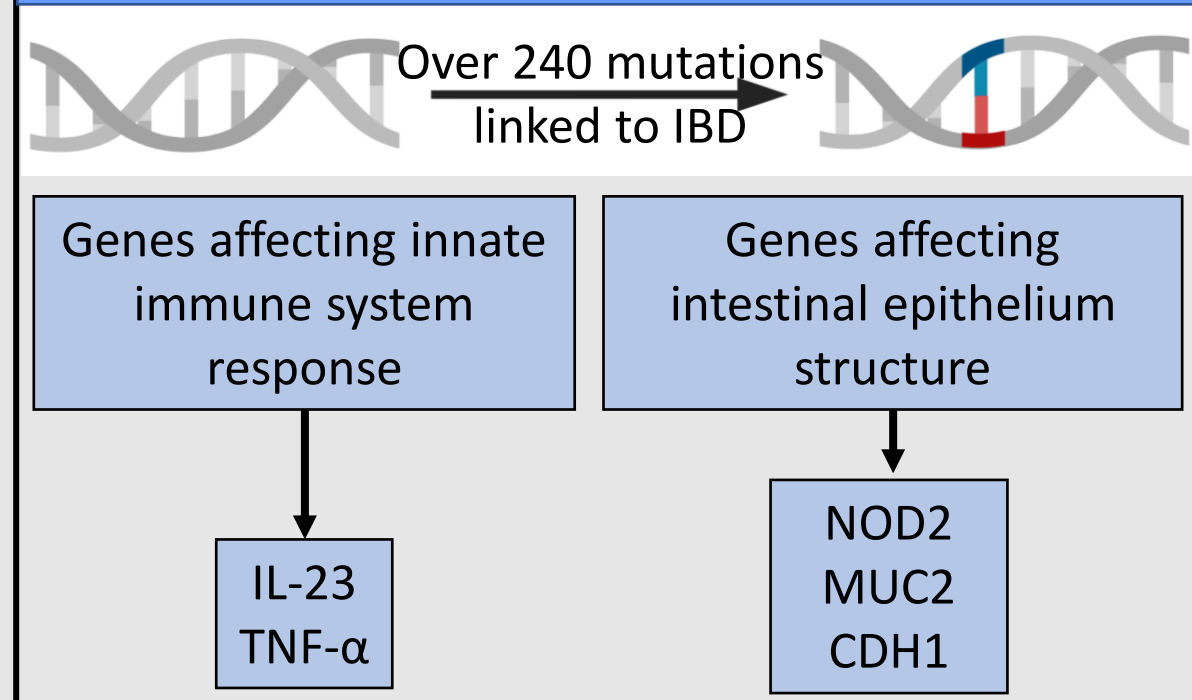


Figure 2: Effects of IBD-linked mutations and examples of affected proteins (El Hadad et al., 2023; Coskun, 2014; Kang et al., 2022; Pugliese et al., 2022; Arfin et al., 2016)

Treatment options for IBD

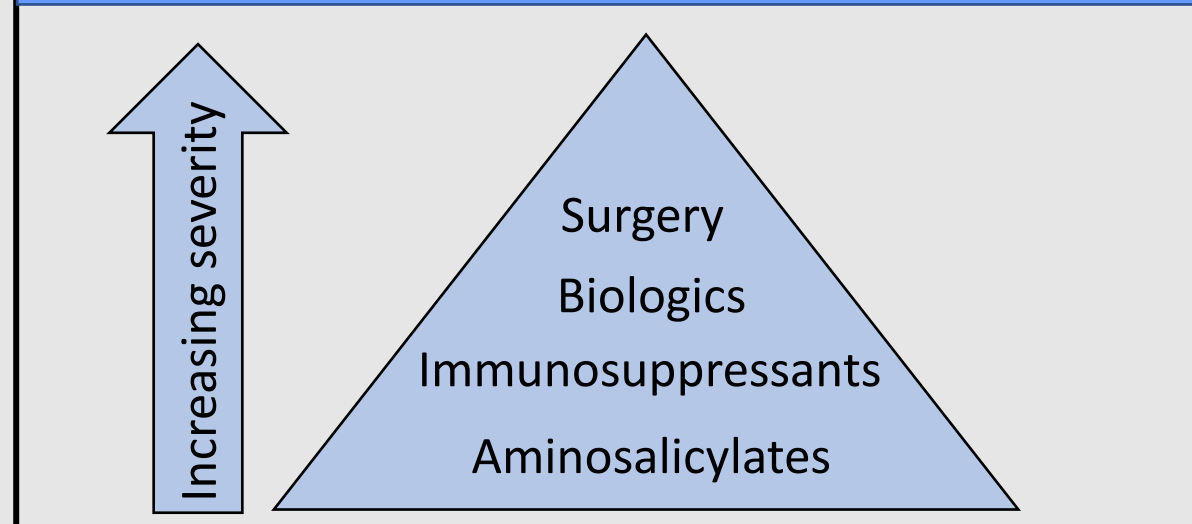


Figure 3: Treatment options based on severity of disease (Crohn's and Colitis UK, 2023).

Prospective IBD cohort study on 5 ethnically-diverse regions in the UK by Misra et al. 2019

$$\text{Crude incidence rate of IBD per region} = \frac{\text{New IBD cases in region over the study period}}{(\text{Region population size}) \times (\text{Study period in years})} \times 100000$$

Figure 4: Calculation of crude incidence rate of IBD per region; study was conducted over a one-year period (Misra et al., 2019).

$$\begin{aligned} \text{Crude incidence rate of IBD for total study population} &= \text{Mean crude incidence rate of IBD for all regions} \\ &= \frac{12.91 + 32.97 + 17.74 + 7.37 + 14}{5} \\ &= 17.0 \text{ cases of IBD per 100000 person-years} \end{aligned}$$

Figure 5: Calculation of crude incidence rate across total study population by finding mean crude incidence rate of all regions (Misra et al., 2019).

| Region | Population size | New cases of IBD | IBD crude incidence rate (new cases per 100000 person-years) |
|-----------------------|-----------------|------------------|--|
| Birmingham | 828263 | 107 | 12.91 |
| Leicester | 260560 | 86 | 32.97 |
| North West London | 439446 | 78 | 17.74 |
| North East Manchester | 543090 | 40 | 7.37 |
| Wolverhampton | 200047 | 28 | 14 |

Table 1: Population size, new cases of IBD in each region, and IBD crude incidence rate in each region investigated in the study (Misra et al., 2019). Calculation method shown in Figure 4.

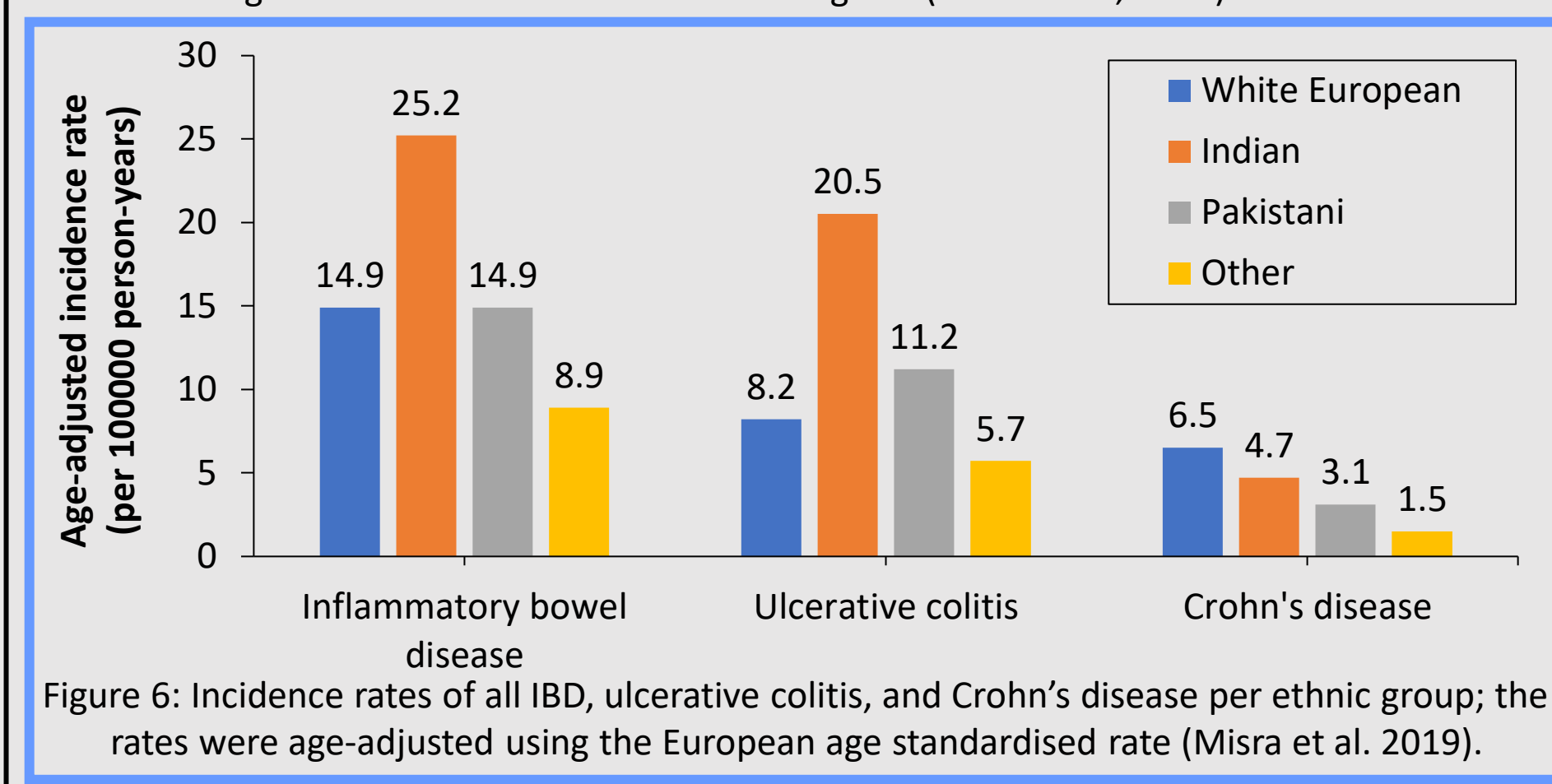


Figure 6: Incidence rates of all IBD, ulcerative colitis, and Crohn's disease per ethnic group; the rates were age-adjusted using the European age standardised rate (Misra et al. 2019).

Results

- Indians had the highest incidence rate of ulcerative colitis

Limitations

- Large confidence interval of 7.3-26.7 for overall crude IBD incidence rate.
- No adjustment for socioeconomic status

Next steps

- Quicker symptom recognition and diagnosis for ethnic minorities
- Review NHS commissioning for ethnically diverse populations

Figure 7: Key points on the results of the study, limitations of the study (Misra et al., 2019), and recommendations.

Impact of IBD

1 in 123 people in the UK have IBD

Over 41% had one or more Accident & Emergency visits before diagnosis

Costs the National Health Service over £900 million annually

Figure 8: Impact of IBD on people in the UK and the National Health Service (Crohn's and Colitis UK, 2022; Crohn's and Colitis UK, 2021; Crohn's and Colitis UK, 2018).

References

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