

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

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Abstract

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.

INTERPRETATION:

The prevalence of IBD increased substantially in many regions from 1990 to 2017, which might pose a substantial social and economic burden on governments and health systems in the coming years. Our findings can be useful for policy makers developing strategies to tackle IBD, including the education of specialised personnel to address the burden of this complex disease.

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