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BURDEN OF DISEASE AND COST OF ILLNESS OF INFLAMMATORY BOWEL DISEASE IN PORTUGAL

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INTRODUCTION

Background: Inflammatory bowel diseases (IBD) are chronic immune disorders of unknown etiology that comprise both Crohn's Disease (CD) and Ulcerative Colitis (UC). CD and UC are increasingly prevalent diseases within western societies, given their chronic nature, early onset, and low mortality rates. In Portugal, it is estimated to affect up to 15/100.000 new inhabitants every year registering a prevalence of 232/100.000 inhabitants in 2019. [1-3]

The complex and chronic facets, allied to the use of biologic therapy, clinical and surgical hospitalizations, place a great economic burden on healthcare systems. Taking all this into consideration, healthcare systems and society will inevitably be progressively burdened by the increasing prevalence of IBD.

Objectives: Estimate the burden of the disease (BoD) of IBD in Portugal and quantify society's cost of illness (CoI) associated, including direct and indirect costs. Assess the economic burden of out-of-pocket, by analyzing the direct costs share allocated to the patient. Raise awareness to IBD in Portugal and thus bringing empowerment to the patient community.

METHODOLOGY

Burden of disease was assessed considering the impact in terms of DALY, estimated considering a prevalence-based model. DALY includes 2 indicators: Years of Life Lost (YLL), and Years Lost due to Disability (YLD)

Costs were estimated considering the societal perspective, using a prevalence-based model. Direct costs comprise hospitalizations, surgeries, medical appointments, emergency visits, pharmacological treatment, exams and transportation. Indirect costs were calculated from patient and caretaker absence, presenteeism, early retirement and premature death.

Hospital production was quantified using the NHS hospital DRG database (2016). Drug costs were analyzed using IQVIA's EHN database (National Hospital Study) and IQVIA's ICH database (Consumer Health Index). DRG funding price from the NHS and unitary prices established by law were used.

An expert panel composed by 5 Portuguese gastroenterologists and a patient reported study were conducted to support the cost analysis and fill in information gaps. The expert panel followed a two-round modified Delphi methodology. The patient reported study was conducted with 370 Portuguese IBD patients by the Portuguese Association of Inflammatory Bowel Disease (APDI).

RESULTS

Considering a prevalence of 24,070 patients (11,866 with Ulcerative Colitis and 12,203 with Crohn's Disease), 6,067 DALYs were estimated to be lost in Portugal due to IBD. This result reflects a total of 507 YLLs (8%) and a total of 5,560 YLDs (92%) in the Portuguese population, meaning most of the impact of the DALYs lost comes from YLD mainly due to the high prevalence of the disease and the early age of onset. On the other hand, the small number of deaths and median age of death reported leads to a low YLL. [1-4]

The total annual cost associated with IBD patients in Portugal was estimated to be €146,293,082, with an average annual cost of €6,075 per patient. This value is divided into €86,834,011 direct costs (59%) and €59,459,070 (41%) indirect costs.

The major factor in direct costs is pharmacological treatment, which accounts for 42% of total costs. This rubric is greatly heightened by the use of biologic drugs. Nonetheless, the erosion observed in originators prices in the last years, allied to a progressively increasing number of available biosimilars, can mitigate the costs allocated to these therapies in the near future. [5]

Regarding out-of-pocket charges, the burden for IBD patients is 14% of total direct costs, amounting to €12,030,257, with an annual average cost of €499 per patient. Even though the Portuguese healthcare system is tendency charge-free, this share must not be underrated.

Indirect costs account for 41% of IBD's total cost. Interestingly, costs of patient work absences showed very similar values to those associated with presenteeism. This demonstrates that IBD does not manifest its impact only in isolated timepoints, but rather that it is present in the everyday lives of patients, significantly reducing their quality of life.

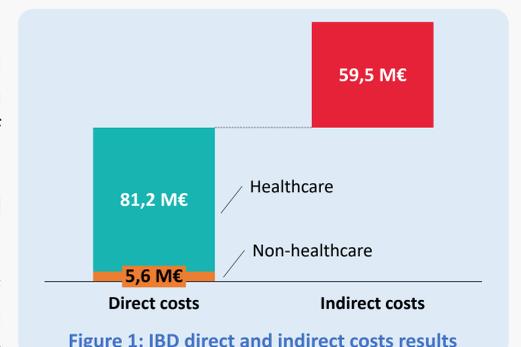


Figure 1: IBD direct and indirect costs results

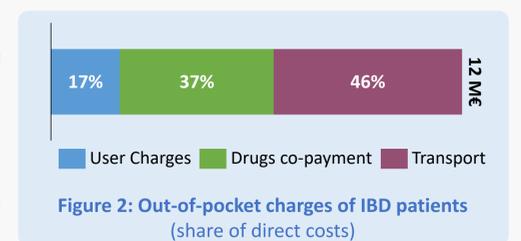


Figure 2: Out-of-pocket charges of IBD patients (share of direct costs)

CONCLUSIONS

It is essential to discuss the relationship between the burden of disease and its cost, especially when discussing a clinical condition with an increasing incidence rate in an ageing population as it is in Portugal. The cost of a DALY due to IBD is €24,112, which is higher than the €10,999 reported for Haemophilia A, the €6,339 reported for atrial fibrillation, or the €15,262 reported for Schizophrenia in Portugal. [6-9]

Due to the need to generate further data and evidence regarding IBD, this study provides the first comprehensive insight at a national level considering all the dimensions of disease burden. The results presented will raise social-economic awareness of IBD, allow for the definition of disease management strategies and support prioritization on resource allocation, especially considering the availability of new treatment approaches. Moreover, this study will set the basis for the thorough assessment of the real burden of IBD in the Portuguese healthcare system and society overall.

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