

OBJECTIVES

- Inflammatory bowel disease (IBD) describes a group of conditions, the two main forms of which are Crohn's disease (CD) and ulcerative colitis (UC).
- Both Crohn's disease and ulcerative colitis are disorders that cause inflammation in the lining of the gastrointestinal tract, disrupting the body's ability to digest food, absorb nutrients, and eliminate waste properly. The exact cause of these conditions remains unknown.
- Therefore, the aim of this literature review was to identify cost-utility analysis publications for treatments used in Ulcerative Colitis (UC) and Crohn's Disease (CD) in Europe.

METHODS

- The scope of the TLR included searching databases, during the timeframe 2013-2023, to identify European cost-utility studies.
- EMBASE®, and MEDLINE® databases were searched using key terms – including cost-effectiveness, cost-utility, etc.
- Bibliographic lists of relevant SLRs were also conducted.
- Study selection was guided by pre-specified inclusion and exclusion criteria (Table 1).

Table 1: Inclusion and exclusion criteria

Criteria	Inclusion	Exclusion
Population	Patients with UC and CD	Healthy volunteers Disease other than UC and CD
Intervention	Pharmacological treatments	Non-pharmacological treatments
Comparator	No limit	None
Outcome	Model components	Other than inclusion
Study design	Cost-utility analysis	Other than cost-utility analysis

Key: CD, crohn's disease; UC, ulcerative colitis

RESULTS

- Fifty-two publications were identified, which included 38 cost-utility analyses (23 UC, 13 CD, and 2 UC/CD studies).

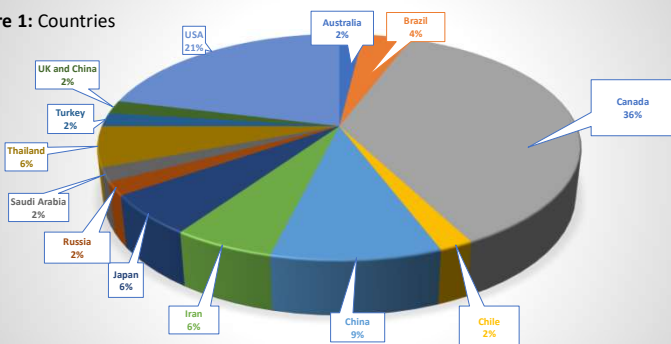
Treatments

- The biologics studied included adalimumab, adalimumab biosimilars, golimumab, infliximab, infliximab biosimilars, vedolizumab, and ustekinumab. Other treatments studied were budesonide, mesalazine, methotrexate, and tofacitinib. Surgery was included as a comparator in six studies, while conventional therapy/standard of care was featured in 13 studies, and two studies included cyclosporine as a comparator. Only one study evaluated the sequencing of biologic therapies.

Countries

- Cost-Utility studies were based in US (n=11); Canada (n=19); China (n=5); Iran, Japan and Thailand (n=3 each); Brazil (n=2); Australia, Chile, Russia, Saudi Arabia, Turkey, UK and China (n=1 each) represented in Figure 1.

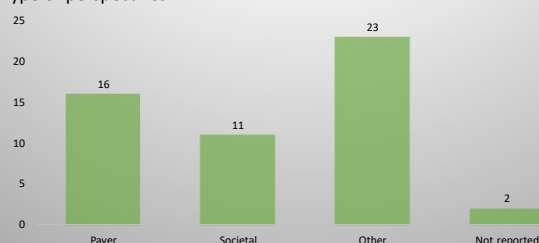
Figure 1: Countries



Perspectives

- Among 38 studies, a societal perspective was considered in six (1 UC and 5 CD). Different type of perspectives are depicted in Figure 2.

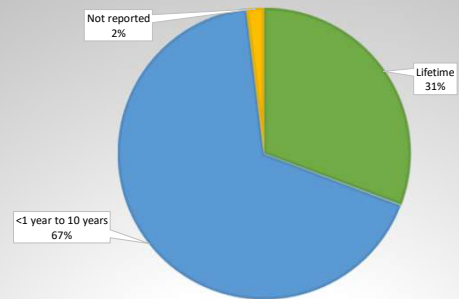
Figure 2: Type of perspectives



Time horizon

- The time horizon for the analyses ranged from 1 year to a lifetime. Majority of studies with time horizon from <1 year to 10 years as depicted in Figure 3.

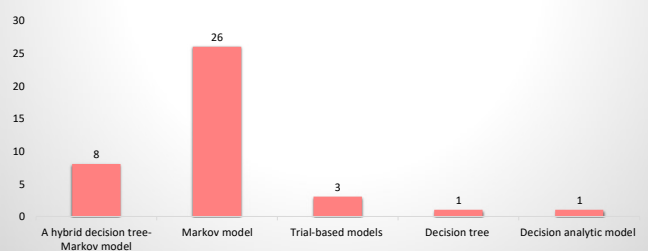
Figure 3: Time horizon



Model type

- The economic models employed included Markov models (n = 26; 17 UC, 7 CD, and 2 UC/CD), a hybrid decision tree-Markov model (n = 8; 4 UC and 4 CD), trial-based models (n = 3; 1 UC and 2 CD), and, in one case each, a decision tree (for UC) and a decision analytic model (UC), as shown in Figure 4. Key health states assessed included remission, mild disease, moderate and/or severe disease, surgery, and death.

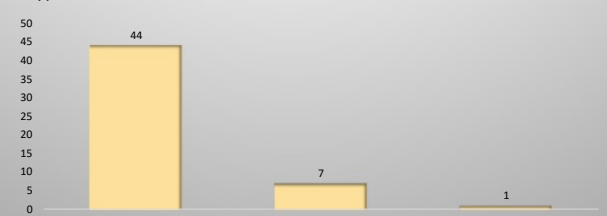
Figure 4: Model types



Types of costs

- Direct costs were reported in 44 studies, while 7 studies reported both direct and indirect costs. Figure 5 illustrates the different types of costs.

Figure 5: Cost types



CONCLUSIONS

- Several model structures for the cost-utility analysis of UC/CD population were identified alongside various time horizons. As more treatment options have become available, surgery has transformed from a treatment comparator to a health state. Future cost-utility analysis needs to assess the impact of sequencing of biologics, also longer time horizons and more hybrid decision tree-Markov models.

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