Cost-effectiveness of Vedolizumab Compared With Ustekinumab for Treatment of Moderately-to-Severely Active Crohn’s Disease in the United Kingdom

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BACKGROUND
- Crohn’s disease (CD) treatment can place a substantial economic burden on the health care system.
- Vedolizumab (VDZ), a biological therapy (an anti-α4β7 mononuclear antibody) is approved in the United Kingdom (UK) for adult patients with moderately-to-severely active CD who have had an inadequate response with, lost response to, or were intolerant to a tumor necrosis factor (TNF) blocker or immunomodulator, or who had an inadequate response with, were intolerant to, or demonstrated dependence on corticosteroids.

OBJECTIVE
- To examine the clinical and economic impact of VDZ compared with ustekinumab (UST) in the treatment of moderately-to-severely active CD from a UK perspective.

METHODS
Model Structure
- Figure 1 illustrates the decision tree framework for the model's induction phase.

RESULTS
Base-Case Results
- VDZ was more effective and less costly than UST over 5-year, 10-year, and 30-year time horizons (Table 3).

Sensitivity Analysis Results
- In one-way sensitivity analyses, VDZ was cost-effective in all cases except the lower bound of VDZ induction efficacy and upper bound of UST induction efficacy (Figure 2).
- In the probabilistic sensitivity analysis, VDZ was cost-effective in 62.3% of cases compared with UST (Figure 3).

LIMITATIONS
- Lack of head-to-head trial data between biologics requires an indirect comparison methodology in order to assess cost-effectiveness.
- Clinical data are limited for UST in an anti-TNF failure population.
- Differences in trial designs make comparisons challenging.
- The short duration of clinical trials requires extrapolation beyond 1 year to capture the full benefit of treatment for this chronic condition.

REFERENCES
4. Buxton et al., 20079

CONCLUSIONS
- Treatment with VDZ improves clinical outcomes for patients with anti-TNF failure and moderately-to-severely active CD.
  - Greater QALY
  - More time spent in remission
  - Fewer surgeries
- VDZ is a cost-effective treatment option for patients with anti-TNF failure and moderately-to-severely active CD.