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COST-EFFECTIVENESS AND BUDGET IMPACT ANALYSIS OF UPADACITINIB FOR THE TREATMENT OF MODERATE-TO-SEVERE ACTIVE CROHN'S DISEASE IN GREECE

Katerina Vellopoulou [1], Katerina Lioliou[1], Panagiotis Papantoniou[2], Ilias Kotsis[2]

[1]ECONCARE LP, Athens, Greece; [2]AbbVie Pharmaceuticals S.A., Athens, Greece

OBJECTIVE

To assess the cost-effectiveness and budget impact (BI) of Upadacitinib (UPA) compared to other moderate-to-severe active Crohn's Disease (aCD) in Greece. The assessment considers biologic-naïve patients (CCF) and biologic-exposed for treating experienced patients (BF)

CONCLUSIONS

UPA was a cost-effective treatment option for managing BF patients with moderate-to-severe aCD. Its insignificant budget impact increase would ensure viability within the Greek healthcare system

The present cost-effectiveness & budget impact findings underpin the potential of Upadacitinib as a promising treatment option in aCD patients, where despite the currently available treatments, a large unmet need still exists

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Panagiotis Papantoniou and Ilias Kotsis are employees of AbbVie Pharmaceuticals S.A.. All authors declare no other competing interests.

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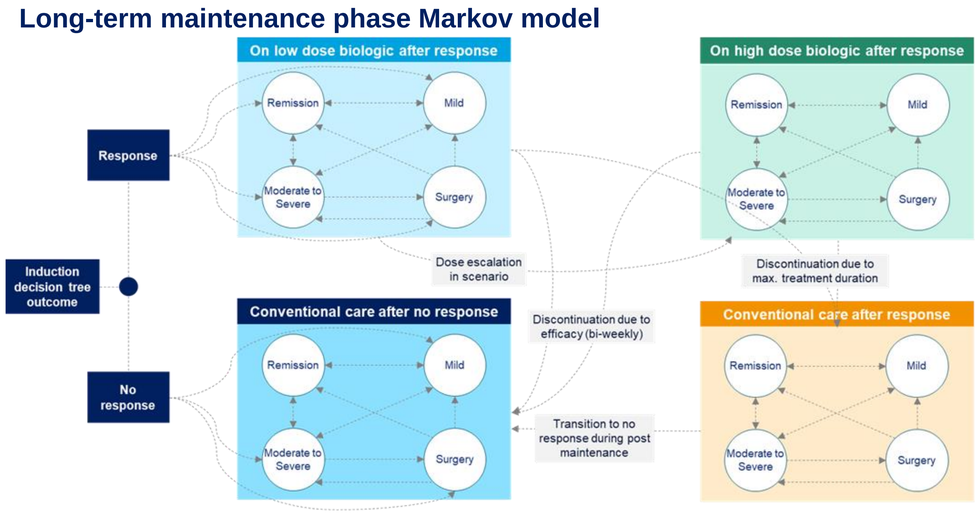
INTRODUCTION

- Crohn Disease (CD) is a chronic inflammatory bowel disease that affects the mucosa, the innermost lining of the intestinal wall in the large bowel (i.e., the colon and rectum)[1, 2]
- Significant clinical, humanistic and economic burden is associated with active CD (aCD)[1-4]
- Many patients with aCD do not achieve disease remission at 52 weeks with current advanced therapies (biologics and small molecule agents)
- Unmet therapeutic need remains in patients with moderate-to-severe aCD[5-7]
- Based on its clinical evidence, Upadacitinib (UPA) represents a promising oral advanced therapy Janus Kinase inhibitor (JAK) in the therapeutic arsenal against this inflammatory disease[7,8]

METHODS

- A cost-effectiveness model (CEM) [9] was adapted to compare UPA 15mg/30mg (UPAblend) with biologics from a public payer perspective (EOPYY)
- The CEM includes a decision tree for induction phase and a Markov model for maintenance phase (See Markov Model framework)
- Treatment Comparators:
  - Adalimumab-Biosimilar (ADA-Bio)
  - Infliximab Biosimilar (IFX-Bio)
  - Adalimumab (160mg/80mg in induction/maintenance phase (ADA 160/80)
  - Vedolizumab 300mg-subcutaneous (VDZ300-SC) & VDZ300
  - Ustekinumab 6mg (UST6)
- Response to treatment was obtained from a network meta-analysis[10]
- Drug acquisition, administration, disease management, adverse events costs were considered in CEM[11,12,13]

Long-term maintenance phase Markov model



- A budget impact model (BIM) was developed
- Local prevalence rates on aCD (0.21%)[14] and Abbvie estimates on Market shares were used.
- Patient population includes naïve, switchers and repeaters throughout a 5-year time horizon.
- Drug acquisition and administration costs were considered in BIM [11] (EOPYY perspective)

Population patient flow used in BIM

	Value (%, N)
Adult population in Greece[15]	8,838,916
Prevalence rate of aCD (%, N)	0.214% [18,915]
Diagnosis & Treatment rate of aCD (%,N)	55% [10,350]
CD patients on Biologics (%, N)	36% [3,726]
Eligible patients for 1st , biologic/JAK treatment line (Naïve) (N,%)	8% [294]
Eligible patients subsequent biologic/JAK treatment line (Switchers) (N,%)	5% [186]
Drop – out rate	3% [112]
Remaining patients (Repeaters) (N)	3,428 (N=3,726 – 112)
Eligible patients for UPA (N)	3,912

Market Shares in the world with UPA

	Naïve & Switchers					Repeaters				
	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
UPA	4%	5%	6%	7%	8%	-	0.5%	0.6%	0.7%	0.9%
UST6	21%	22%	22%	23%	23%	22%	21.9%	22.4%	22.9%	23.4%
ADA-Bio	10%	11%	11%	12%	12%	10%	10%	10.5%	11.0%	11.5%
ADA80/40	15%	15%	14%	14%	13%	16%	15.9%	15.4%	14.9%	14.4%
ADA160/80	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
IFX	15%	15%	14%	14%	13%	16%	15.9%	15.4%	14.9%	14.4%
IFX-Bio	14%	14%	13%	13%	12%	14%	14%	13.9%	13.9%	13.8%
IFX-SC	4%	4%	4%	4%	4%	4%	4%	4.4%	4.9%	5.3%
VDZ300	9%	9%	8%	8%	7%	10%	10%	9.4%	8.9%	8.4%
VDZ300-SC	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%

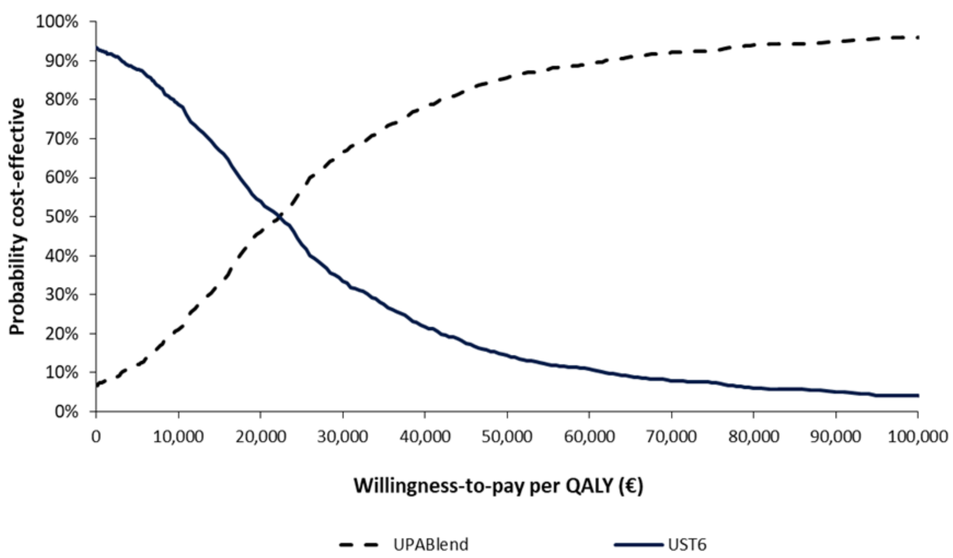
RESULTS

Base case incremental results in BF patients

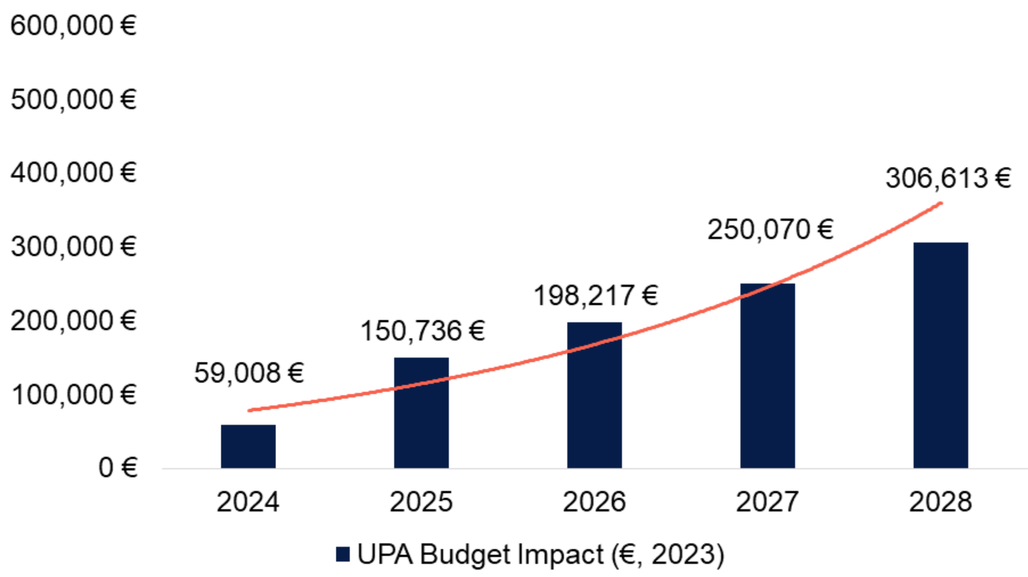
Treatment option	Total Costs (€)	Total QALYs	Incremental Costs (€)	Incremental QALYs	ICER vs Baseline	ICER incremental
ADA-Bio	150,357	10.327	NA	NA	NA	
ADA	154,334	10.335	3,977	0.008	479,584	Extended dominance
ADA160/80	154,886	10.327	4,530	0.000	--	Dominated
VDZ300-SC	158,138	10.363	7,781	0.036	217,690	Extended dominance
VDZ300	158,199	10.362	7,842	0.035	224,642	Dominated
UST6	161,255	10.378	10,898	0.051	212,265	Extended dominance
UPABlend	163,569	10.484	13,212	0.157	84,419	84,419

- In CCF patients, IFX-Bio seems to be the most cost-effective option, with an ICER of €21,708 per QALY gained.
- UPAblend and ADA160/80 are the most cost-effective options among the biologics in BF patients —UPA dominates (or extendedly dominates) all other biologic treatments, being more costly but also with the highest effectiveness (QALYs).
- Probabilistic results indicate that UPAblend has an 86% probability of being the most cost-effective treatment available at the €51,000 WTP[16] (See figure)
- For an eligible population ranging from N=3,912 to N=4,755 in the first and fifth year, the progressive utilization of UPA in the market of moderate-to-severe aCD in Greece would increase EOPYY budget by €59,008 and €306,613 the first and fifth year, respectively, with an average 5-year increase of 0.63%.

Probabilistic sensitivity analysis (UPAblend versus UST6) in BF patients



Budget Impact of UPA on the Greek payer (€, 2023)



Contact details: k.vellopoulou@econcare.gr