EE29: Cost-effectiveness analysis of subcutaneous infliximab in patients with moderate-to-severe Crohn's disease in Japan

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INTRODUCTION

- Crohn's disease(CD) is a progressive disease, characterized by transmural inflammation, and it may involve any portion of luminal gastrointestinal tract. Over time disease progression often times leads to surgery.
- Although intravenous (IV) infliximab is an established therapy, its peak-to-trough pharmacokinetic fluctuations can lead to an inadequate treatment response.
- Recently developed self-injectable subcutaneous (SC) infliximab provides sustained drug exposure, and real-world evidence-including the REMSWITCH study and recent clinical cohorts-demonstrates that patients with an inadequate IV response can derive clinical benefits from switching to the SC formulation even during the maintenance phase.
- A Phase 3, single-arm, open-label study with Japanese CD patients concluded that infliximab subcutaneous was well tolerated over 44 weeks, with no new safety concerns. Clinical remission defined as CDAI <150 at Week 44 was maintained in 98.3% of patients. Switching from IV to SC infliximab can offer sustained clinical benefits with improved convenience.

OBJECTIVES

- Anticipating Japanese regulatory approval in 2027, the objective of this study is to evaluate cost-effectiveness of infliximab subcutaneous over adalimumab in Japanese healthcare.

METHODS

Model structure

- A Markov model was created to compare treatment used in patients with Crohn's disease.
- Treatment included two biologic drugs: infliximab(Zymfentra) and adalimumab(Humira), and surgery or standard of care as the last line of treatment.

Population

- The population characteristics came from the Takeuchi study; mean age was 40, percent of females was 52% and average weight of the population was 61.15kg. [1]

Efficacy

Table 1. Treatment efficacy of Adalimumab and Infliximab subcutaneous(Probability)

Induction				
Remission			**Response**	
Placebo (after induction)	16.90%		Placebo (after induction)	27.60%
Infliximab	54.54%		Infliximab	2.96%
Adalimumab	43.59%		Adalimumab	2.91%
Maintenance				
Remission			**Response**	
Placebo	23.30%		Placebo	38.10%
Infliximab	61.30%		Infliximab	4.58%
Adalimumab	55.00%		Adalimumab	4.77%

Outcomes

- Outcomes of the model included costs for public payer, quality-adjusted life years, life years in remission, and life years in response. Published data including network meta-analysis were incorporated in the parameters.

CONCLUSIONS

In a treatment landscape where patients may experience disease progression while exhausting available biologic options, subcutaneous infliximab could represent a valuable alternative that supports both disease control and cost-containment compared with adalimumab.

REFERENCES

Takeuchi K et al., *Gastrointest Endosc*. 2026;103(5):S1354-S1355. [*DDW 2026*, Poster number EP43].

RESULTS

- Over a 10 year time horizon, treatment of infliximab subcutaneous had better health outcomes results in comparison to adalimumab including higher quality adjusted life years(QALYs) with an incremental gain of 0.2457 QALYs, and an additional 0.8074 life years in remission and 0.0493 years in response.
- Total treatment costs(pharmacotherapy, disease management, surgery, adverse events treatment) were JPY 437,850 lower for infliximab subcutaneous over the 10-year timeframe.
- Total biologics costs were JPY 90,287 higher for subcutaneous infliximab than for adalimumab.
- In the model, the lower initial response rate with adalimumab led to earlier treatment discontinuation and a greater proportion of patients progressing to surgery. Although the shorter treatment duration reduced adalimumab acquisition costs, these savings were partially offset by higher costs associated with surgery and subsequent disease management.

Deterministic Sensitivity Analysis

- In the deterministic sensitivity analysis, infliximab SC consistently yielded lower total costs and more quality-adjusted life-years (QALYs) than adalimumab when each tested parameter was varied individually to its lower and upper bounds. Thus, none of the tested parameter variations reversed the cost savings or health benefits associated with infliximab SC, supporting the robustness of the base-case finding of dominance within the ranges examined.

Probabilistic Sensitivity Analysis

- In the probabilistic sensitivity analysis, most simulations fell in the southeast quadrant of the cost-effectiveness plane, indicating that infliximab SC generated more quality-adjusted life-years (QALYs) at lower total costs than adalimumab.
- Most simulations also lay below the willingness-to-pay threshold line, suggesting a high probability of cost-effectiveness at the selected threshold. These findings support the robustness of the base-case results to joint uncertainty in model parameters.

Table 2. Results

Costs			
	Infliximab subcutaneous	Adalimumab	Incremental
Total	**¥6,155,115.40**	**¥6,592,965.63**	**(¥437,850.23)**
Pharmacotherapy	¥1,219,574.57	¥1,129,287.22	¥90,287.35
Standard of care	¥1,427.76	¥1,624.99	(¥197.23)
Surgery costs	¥1,451,516.37	¥1,559,474.32	(¥107,957.95)
Disease management	¥3,416,612.33	¥3,878,333.46	(¥461,721.14)
Outcomes			
	Infliximab subcutaneous	Adalimumab	Incremental
QALY	5.3739	5.1281	0.2457
Life years (total)	8.4321	8.4321	0.0000
Life years (in remission)	1.6949	0.8875	0.8074
Life years (in response)	0.1250	0.0757	0.0493



