

# Cost-Effectiveness of Omalizumab in Chronic Spontaneous (Idiopathic) Urticaria Refractory to H1-Antihistamines in Turkey

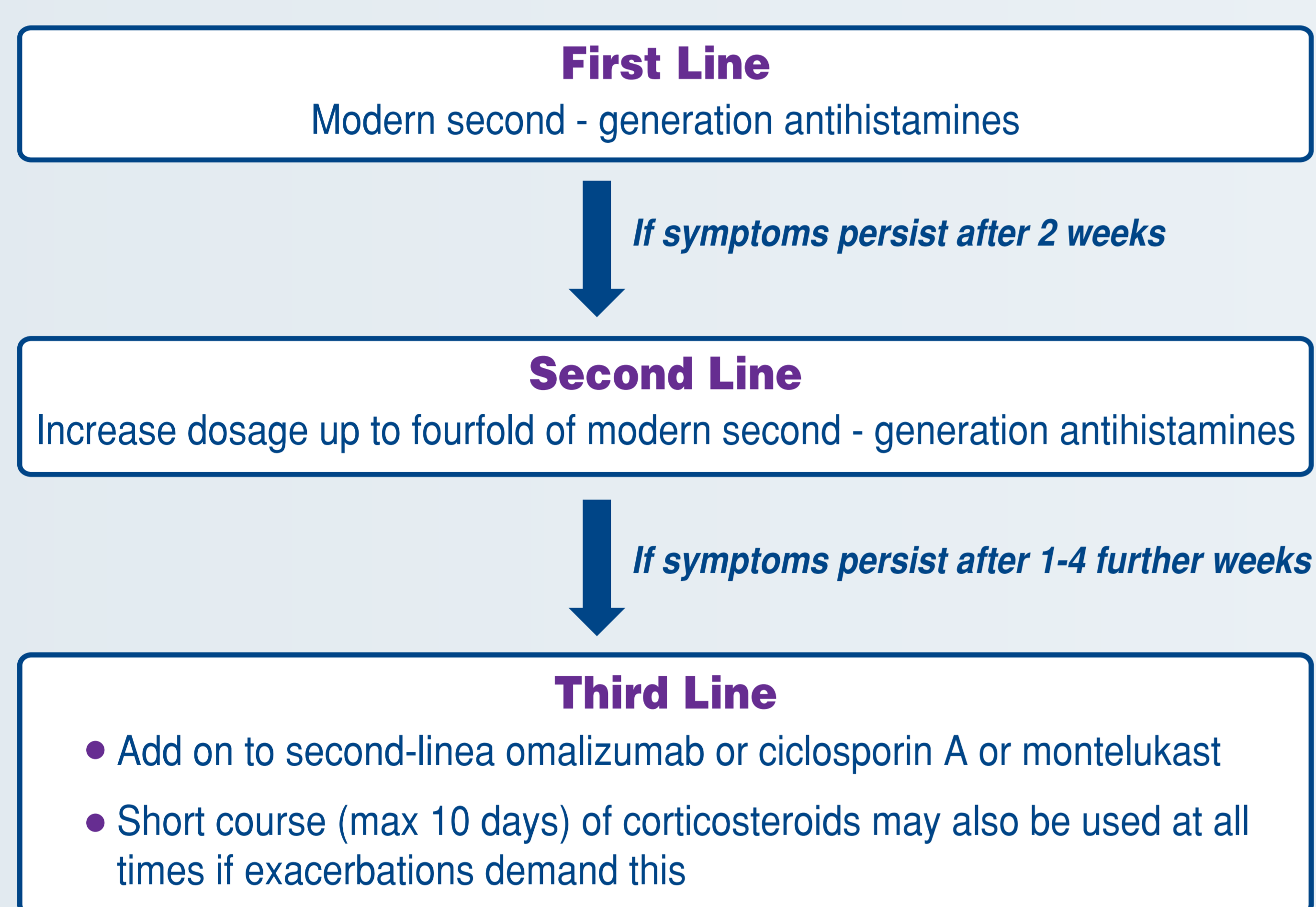
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## INTRODUCTION

- Chronic spontaneous urticaria (CSU) is a debilitating dermatological disease characterised by recurrent spontaneous outbreaks of pruritic wheals (hives), which also may be accompanied by angioedema persisting for 6 weeks or more.<sup>1</sup>
- Although the duration of CSU varies, it is generally 1 to 5 years, despite treatment, and longer in more severe cases that are difficult to control. Often these patients show a more severe disease or, for example, patients have concurrent angioedema, with comorbid physical urticarial, or with a positive autologous serum skin test<sup>2,3</sup>
- CSU has a negative impact on many aspects of patient health-related quality of life (HRQOL), including physical discomfort, feelings, social interactions, sleep, and psychological state. The unpredictability of attacks also is a burden, as patients feel they lose control of their lives.<sup>4</sup>
- For patients with CSU who are refractory to antihistamine therapy, the availability of a licensed, effective, and safe treatment option is limited. The only approved treatment for CSU is non-sedating H1 antihistamines (nsAHs), when used according to the label dose, as a first-line treatment. However, many patients will remain symptomatic (with only an approximate 40%-50% response rate).<sup>3</sup>
- The guidelines recommend further step-wise treatment as shown in Figure 1, which presents the updated EAACI/GA2LEN/EDF/WAO treatment guidelines<sup>5,6</sup>

Figure 1. EAACI/GA2LEN/EDF/WAO Treatment Algorithm for CSU



## OBJECTIVE

- The objective of this study is to assess the cost-effectiveness of Omalizumab compared to standard of care (SoC) in treatment of patients with moderate to severe CSU refractory to standard of care (SoC) in Turkey

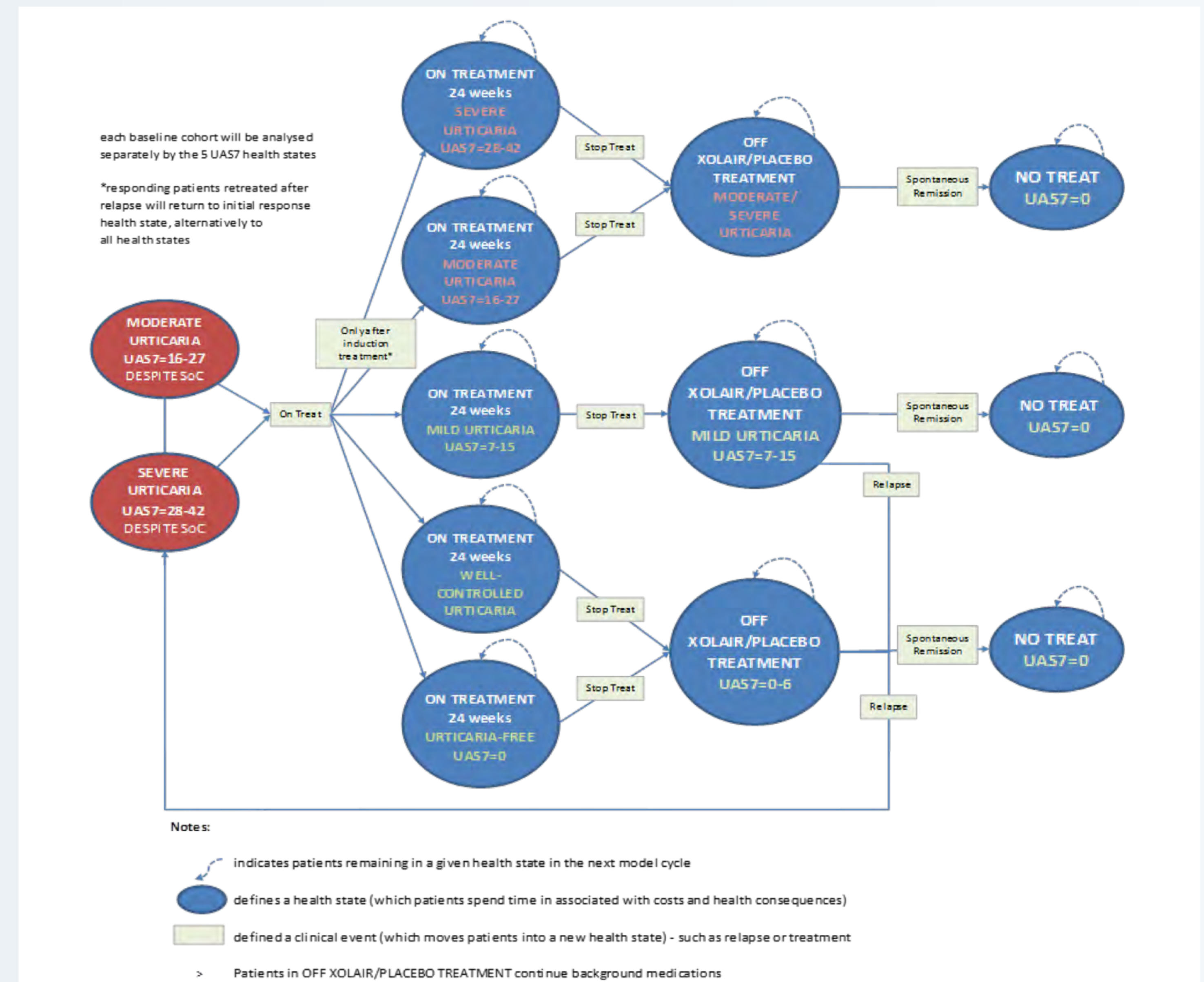
## METHODS

- The cost-effectiveness model for Xolair was designed to consider the clinical benefits, resource use, and costs related to the use of Xolair in the treatment of refractory CSU from a Turkish health care payer perspective
- A Markov model of 10 years horizon was developed to estimate costs and outcomes associated with omalizumab 300mg/every 4 weeks and SoC for 24 weeks (SoC: licensed dose H1 antihistamines) using data from two phase III studies (ASTERIA I&II includes patients with CSU refractory to licensed dose of H1-antihistamines)<sup>7</sup> as base case. Alternatively, another model with omalizumab 150mg/every 4 weeks was studied by keeping all other factors same with base case.
  - The following assumptions were made about the target patient groupwith:
    - A history of at least 6 months CSU diagnosis,
    - UAS7 score of 16 or higher at baseline,
    - Weekly Itch Severity Score of 8 or higher at baseline,
    - An urticaria Activity Score (0-6 scale) (UAS) of 4 or higher at baseline visit.
- All patients in the treatment strategy received either omalizumab or placebo, both on top of antihistamines background medication, for 24 weeks, at which time the intervention therapy is stopped and the background medication continued.
- Patients who respond (defined as UAS7 ≤ 6) are re-treated by the same strategy upon relapse (defined as UAS7 ≥ 16, alternatively or ≥ 28). Following re-treatment, patients enter their original response health state, i.e., MILD, WELL-CONTROLLED, or URTICARIA-FREE. Alternatively, the response to re-treatment may be similar to that of the entire population after initial treatment, i.e., all five health states which are shown in Table 1.

Health State	UAS7	
	Score	Rationale
SEVERE urticaria	28-42	UAS7 ≥ 28 is a criterion cited by UK clinicians as being sometimes applied to select severe patients for current treatment with Xolair
MODERATE urticaria	16-27	UAS7 ≥ 16 is an entry criterion for the trials
MILD urticaria	7-15	This range of UAS7 scores lie between a good response and moderate symptoms and is indicative of a lower level of response that may or may not be re-treated Depending on the baseline UAS7 score, attainment of a MILD health state could still indicate a good response
WELL-CONTROLLED urticaria	1-6	UAS7 ≤ 6 is the response definition from the ASTERIA and GLACIAL trials and is accepted as a good response
URTICARIA-FREE	0	UAS7 = 0 is indicative of no symptoms of CSU and considered a full treatment response

- Patients also can have a spontaneous remission, and relevant rates are applied to these patients.
- Figure 2 presents the structure of the model

Figure 2. Basecase Model Concept



- Urticaria Activity Score 7 (UAS7) is used to measure the outcome of the treatment and symptom free days (UAS7 ≤ 6) as the outcome measure. During treatment, patients can progress through the health states according to their UAS7 score.
- Resource utilization data were based on reconciled opinion of seven medical experts which was obtained Delphi panel technique.
- Unit costs were taken from the Turkish health care payer's (Social Security Institution) official lists.
- Costs and outcomes were evaluated over 10 years and discounted at 3%.
- Results were presented as incremental cost/symptom free days.

## RESULTS

- In the basecase model (omalizumab 300mg/every 4 weeks and SoC for 24 weeks), the incremental symptom free days with omalizumab versus SoC was 27,965 days and the incremental cost was 1,610,349 Turkish Liras (TL) for 100 patients over 10 years. The incremental cost per symptom free day was 57.59 TL (Table 2).

Table 2. Basecase (omalizumab 300 mg) Cost-effectiveness Results

	Total		Incremental		ICER	
	Treatment Cost (TL)	Symptom free days	Treatment Cost (TL)	Symptom free days	Treatment Cost / Symptom free days (TL)	Treatment Cost / Symptom free days (EUR)*
SoC	174,377	10,519	-	-	-	-
Omalizumab 300 mg	1,784,726	38,484	1,610,349	27,964.64	57.59	20.21

\* Monthly average exchange rate Sep'14, TL/EUR: 2.85

- Also, the incremental cost per symptom free day was calculated as 135.37 TL in the alternative model (omalizumab 150mg/every 4 weeks and SoC for 24 weeks). The incremental symptom free days with omalizumab versus SoC was 4,208.17 days and the incremental cost was 569,67 Turkish Liras (TL) for 100 patients over 10 years.
- One-way sensitivity analyses by increasing and decreasing the price by 10% and 20% confirmed the robustness of the model results

## CONCLUSION

- CSU affects the quality of life of patients and is associated with direct and indirect costs to payers and society.
- Omalizumab 300mg/every 4 months is a cost-effective treatment option for patients with moderate to severe CSU refractory to standard of care (SoC) in Turkish setting.
- The initial cost-effectiveness model was based on the data available from the phase 3 ASTERIA I, ASTERIA II, and Turkish payer requirements. However, future adaptations of the model may expand the model to include additional concepts to allow exploration of other populations, based on availability of real life data and additional analyses.

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