

## Letter to Editor

# Biologic Drugs Treatment of Chronic Urticaria



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### Dear Editor

**C**hronic Urticaria (CU) is a skin disorder characterized by wheal and flare with a duration of more than 6 weeks affecting 1%-2% of the population (more common in women). Thirty to 35% of cases of CU have angioedema [1]. The etiology of chronic spontaneous urticarial is not usually clear, 40%-50% are idiopathic and 30%-40% are autoimmune [2, 3]. Quality of life in CU is usually disturbed which has a direct relation with severity [4]. The first line treatment choice of urticarial is second Antihistamines (AHs) such as cetirizine, loratadine, neotadine, and fexofenadine. Often CU patients are resolved by AHs [1].

Biologic medications are a new and expanding field of therapy for various disorders such as CU. Omalizumab as a recombinant, humanized, and monoclonal IgG1 anti-IgE antibody is the therapy choice as the third step approved by Food and Drug Administration (FDA) indication age >6 years (150 or 300 mg per 4 weeks subcutaneous) [5, 6]. Up to 80% of patients are well-controlled with Omalizumab [7]. In mild-to-moderate Coronavirus disease 2019 (COVID-19), the infection could use Omalizumab but not in severe cases [8].

Ligelizumab is an anti-IgE (doses: 24 mg, 72 mg, and 240 mg) that was more effective than omalizumab in phase 2 of a clinical trial study in CU [7]. Mepolizumab is an anti-IL5 100 mg every four weeks. Dupilumab is a monoclonal agent blocking the IL-4/IL-13 axis. Benralizumab is an IL-5Ra blocker monoclonal antibody, 30mg every 4 weeks for 3 times, then every 8 weeks. Tezepelumab is a Thymic Stromal Lymphopoi-Etin (TSLP) blocker. Anti-TNF-a (Etanercept, Infliximab, Adalimumab) have been tested in patients over age18 with success. Abatacept is a monoclonal antibody that links cluster differentiation (CD) 80 and CD86. Rituximab is a chimeric monoclonal antibody that targets the CD20 [9] (Table 1).

A study showed that Remibrutinib, Rilzabrutinib, and Fenebrutinib (BTK inhibitors) have been investigated in CSU (phases 2 and 3) [7]. A study showed that Remibrutinib (oral treatment option) is effective for patients with moderate to severe CSU [11].

Gil-Sierra et al. showed that Omalizumab had long-term effectiveness in CIU patients. Adverse drug reactions are rare due to biological agents. They are less toxic than traditional drugs [12].

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**Table 1.** Biological drugs under study for treatment of chronic spontaneous urticaria [10]

Molecules	Mechanism	Types	Stages	Indication
CDX-0159	Anti-tyrosine kinase KIT	mAb	1	CSU and chronic inducible urticaria
Mepolizumab	Anti-IL-5	mAb	1	CSU
Ligelizumab	Anti-IgE	mAb	2	CSU in children from 12 to <18 years of age
Dupilumab	Anti-IL-4/-13	mAb	2	CSU
MTPS9579A	Tetrameric $\beta$ -tryptase	mAb	2	CSU
Tezepelumab	Thymic stromal lymphopoietin	mAb	2	CSU
Remibrutinib	Anti-BTK	Small molecule	3	CSU
Benralizumab	Anti-IL-5 receptor	mAb	4	CSU

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KIT: Tyrosine kinase; IgE: immunoglobulin E; IL: Interleukin; BTK: Bruton tyrosine kinase; CSU: Chronic spontaneous urticaria; mAb: Monoclonal antibody.

## Ethical Considerations

### Compliance with ethical guidelines

There were no ethical considerations to be considered in this research.

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### Conflicts of interest

The author declare no conflict of interest

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