Supplementary Table 1. Electronic database search strategies and search yields

Database	Platform	Coverage	Search date	Records	Limits
MEDLINE/PubMed	PubMed	Database inception	15 June 2026	1,588	No date, language, human-only, or publication-type limits
Scopus	Elsevier Scopus	Database inception	15 June 2026	2,778	No date, language, human-only, or publication-type limits
Web of Science Core Collection	Clarivate Web of Science	Database inception	15 June 2026	666	No date, language, human-only, or publication-type limits
Embase	Embase.com	Database inception	16 June 2026	1,728	No date, language, human-only, or publication-type limits
Search dates, database yields, and absence of date, language, human-only, or publication-type limits were verified against the archived search histories/screenshots and raw database exports					

MEDLINE/PubMed

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((“Urticaria”[Mesh] OR urticaria[Title/Abstract] OR “chronic urticaria”[Title/Abstract] OR “chronic spontaneous urticaria”[Title/Abstract] OR “chronic idiopathic urticaria”[Title/Abstract]) AND (chronic[Title/Abstract] OR spontaneous[Title/Abstract] OR idiopathic[Title/Abstract])) AND (sex[Title/Abstract] OR gender[Title/Abstract] OR female[Title/Abstract] OR females[Title/Abstract] OR woman[Title/Abstract] OR women[Title/Abstract] OR male[Title/Abstract] OR males[Title/Abstract] OR man[Title/Abstract] OR men[Title/Abstract]) AND (laborator*[Title/Abstract] OR biomarker*[Title/Abstract] OR inflamm*[Title/Abstract] OR autoimmun*[Title/Abstract] OR autoantibod*[Title/Abstract] OR serolog*[Title/Abstract] OR hematolog*[Title/Abstract] OR haematolog*[Title/Abstract] OR coagulat*[Title/Abstract] OR eosinophil*[Title/Abstract] OR basophil*[Title/Abstract] OR immunoglobulin*[Title/Abstract] OR IgE[Title/Abstract] OR “C-reactive protein”[Title/Abstract] OR CRP[Title/Abstract] OR “D-dimer”[Title/Abstract] OR platelet*[Title/Abstract] OR “mean platelet volume”[Title/Abstract] OR thyroid[Title/Abstract] OR “anti-TPO”[Title/Abstract] OR “anti-thyroglobulin”[Title/Abstract] OR “autologous serum skin test”[Title/Abstract] OR ASST[Title/Abstract] OR “autologous plasma skin test”[Title/Abstract] OR APST[Title/Abstract] OR “basophil activation test”[Title/Abstract] OR BAT[Title/Abstract] OR “histamine release”[Title/Abstract] OR osteopontin[Title/Abstract])
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Scopus

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TITLE-ABS-KEY((urticaria AND (chronic OR spontaneous OR idiopathic)) AND (sex OR gender OR female OR females OR woman OR women OR male OR males OR man OR men) AND (laborator* OR biomarker* OR inflamm* OR autoimmun* OR autoantibod* OR serolog* OR hematolog* OR haematolog* OR coagulat* OR eosinophil* OR basophil* OR immunoglobulin* OR IgE OR “C-reactive protein” OR CRP OR “D-dimer” OR platelet* OR “mean platelet volume” OR thyroid OR “anti-TPO” OR “anti-thyroglobulin” OR “autologous serum skin test” OR ASST OR “autologous plasma skin test” OR APST OR “basophil activation test” OR BAT OR “histamine release” OR osteopontin))
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Web of Science Core Collection

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TS=((urticaria AND (chronic OR spontaneous OR idiopathic)) AND (sex OR gender OR female OR females OR woman OR women OR male OR males OR man OR men) AND (laborator* OR biomarker* OR inflamm* OR autoimmun* OR autoantibod* OR serolog* OR hematolog* OR haematolog* OR coagulat* OR eosinophil* OR basophil* OR immunoglobulin* OR IgE OR “C-reactive protein” OR CRP OR “D-dimer” OR platelet* OR “mean platelet volume” OR thyroid OR “anti-TPO” OR “anti-thyroglobulin” OR “autologous serum skin test” OR ASST OR “autologous plasma skin test” OR APST OR “basophil activation test” OR BAT OR “histamine release” OR osteopontin))
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Supplementary Table 2. Study-level risk-of-bias judgments and key methodological considerations

Study	Design/setting	Appraisal framework	Overall judgment	Key methodological considerations
Kulthanan et al.[22]	Single-center observational; Thailand	Revised JBI analytical cross-sectional framework with design-specific interpretation	Low	Single-center study with a small male subgroup; ASST outcome directly reported.
Aktar et al.[23]	Single-center cross-sectional; Türkiye	Revised JBI analytical cross-sectional framework with design-specific interpretation	Low	Small historical chronic-urticaria cohort; ASST and APST outcomes directly reported.
Hossein Zadeh Attar et al.[21]	Retrospective cross-sectional; Germany	Revised JBI analytical cross-sectional framework with design-specific interpretation	Low	Retrospective design; BAT and IgE were available in tested subgroups.
Asero[14]	Cross-sectional severe CSU; Italy	Revised JBI analytical cross-sectional framework with design-specific interpretation	Low	Selected antihistamine-refractory severe CSU population; limited generalizability beyond this phenotype.
Kolkhir et al.18	Two-center retrospective; Germany/Russia	Revised JBI analytical cross-sectional framework with design-specific interpretation	Low	Large cohort; some sex-stratified continuous outcomes lacked complete dispersion measures.
Lai and Sarkan24	Cross-sectional; Malaysia	Revised JBI analytical cross-sectional framework with design-specific interpretation	Low	Small male subgroup; directly reported ASST and autoimmune-antibody findings.
Sartorio et al.[15]	Multicenter retrospective; Italy	Revised JBI analytical cross-sectional framework with design-specific interpretation	Low	Angioedema-restricted phenotype with sparse events; used as a sensitivity result.
Kocatürk et al.[5]	International registry baseline	Revised JBI analytical cross-sectional framework with design-specific interpretation	Low	Large registry; the female denominator for the 51-65-year CRP subgroup was reconstructed and used only in sensitivity interpretation.
Liu et al.[19]	Cross-sectional biomarker study; China	Revised JBI analytical cross-sectional framework with design-specific interpretation	Low	Small but sex-balanced sample with a standardized laboratory panel.
Sirufo et al.[25]	Prospective non-interventional; Italy	Revised JBI analytical cross-sectional framework with design-specific interpretation	Low	Small omalizumab-treated refractory CSU cohort; treatment-selected population.
Confino-Cohen et al.[16]	Retrospective database; Israel	Revised JBI analytical cross-sectional framework with design-specific interpretation	Low	Very large database study using legacy CU terminology; results may reflect routine testing patterns.
Chanprapaph et al.[26]	Retrospective single-center; Thailand	Revised JBI analytical cross-sectional framework with design-specific interpretation	Low	Complete-thyroid-antibody subset and small male group; ASST/APST available in tested subsets.
Preis et al.[17]	Retrospective monocentric cohort; Germany	Revised JBI analytical cross-sectional framework with design-specific interpretation	Low	Omalizumab-treated cohort with outcome-specific denominators; treatment-selected population.
Curto-Barredo et al.[27]	Retrospective observational; Spain	Revised JBI analytical cross-sectional framework with design-specific interpretation	Low	Adult retrospective cohort; directly calculable ASST data.
Wan and Wu[36]	Prospective case-control; Taiwan	Revised JBI analytical cross-sectional framework with design-specific interpretation	Low	Sex-specific denominators for the thyroid-antibody result were omitted; narrative contribution only.
Mohammed[28]	Prospective treatment cohort; Iraq	Revised JBI analytical cross-sectional framework with design-specific interpretation	Low	Treatment cohort using legacy CU terminology; ASST data directly calculable.
Safari et al.[29]	Cross-sectional; Iran	Revised JBI analytical cross-sectional framework with design-specific interpretation	Low	Small idiopathic chronic-urticaria sample.
Sahiner et al.[31]	Retrospective pediatric cohort; Türkiye	Revised JBI analytical cross-sectional framework with design-specific interpretation	Low	Pediatric cohort; ASST was performed in a tested subset.
Moos et al.[20]	Retrospective; Poland	Revised JBI analytical cross-sectional framework with design-specific interpretation	Low	Some neutrophil, lymphocyte, and NLR results were reported graphically without exact dispersion measures.

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Özçeker et al.[33]	Retrospective pediatric cohort; Türkiye	Revised JBI analytical cross-sectional framework with design-specific interpretation	Low	Pediatric study; sex-by-ASST cells were not extractable.
Najib et al.[35]	Retrospective cohort; USA	Revised JBI analytical cross-sectional framework with design-specific interpretation	Low	Legacy CIU cohort with varying tested subgroups for BAT and thyroid outcomes.
Collet et al.[34]	Cross-sectional clinical study; France	Revised JBI analytical cross-sectional framework with design-specific interpretation	Low	Very small historical cohort with zero male events for autoimmune thyroid disease.
Godse[32]	Cross-sectional pediatric study; India	Revised JBI analytical cross-sectional framework with design-specific interpretation	Low	Very small pediatric chronic-urticaria cohort.
Asero[10]	Comparative correspondence/short report; Italy	Revised JBI analytical cross-sectional framework with design-specific interpretation	Low	Legacy CU short report; limited methodological detail but directly calculable ASST data.
Caproni et al.[30]	Cross-sectional comparative study; Italy	Revised JBI analytical cross-sectional framework with design-specific interpretation	Low	Small legacy CIU cohort with directly reported ASST and autoreactivity-related outcomes.
All overall judgments reflect the two-reviewer consensus reported in the manuscript. Key methodological considerations describe features relevant to interpretation and were not, by themselves, treated as reasons to exclude a study or automatically downgrade the overall judgment. APST: Autologous plasma skin test, ASST: Autologous serum skin test, BAT: Basophil activation test, CIU: Chronic idiopathic urticaria, CSU: Chronic spontaneous urticaria, JBI: Joanna Briggs Institute, NLR: Neutrophil-to-lymphocyte ratio				