Prevalence and incidence of diagnosed chronic inducible urticaria (CIndU) in the insured US population: a real-world study using claims data

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Background
• There is a scarcity of reliable data on the prevalence and incidence of CIndU overall and by subtype, as no population based studies were conducted

Objective
• The objective of this study was to estimate the incidence and prevalence of diagnosed CIndU among adult and pediatric populations using two large US healthcare databases (Optum CDinformatics Data Mart Claims (CDM) and MarketScan)

Methods
• The target population (adult ≥18yrs and pediatric <18yrs) was identified in the Optum CDM (01-Jan-2012 and 31-Dec-2018) and MarketScan (01-Jan-2012 and 31-Dec-2017) (Figure 1) databases based on ≥ 2 ICD-9 and/or ICD-10 codes of CIndU forms (e.g. symptomatic dermatographism, cholinergic, etc.) and/or angioedema ≥ 6 weeks apart during the study identification period and data available for 12 months pre-index.
• Incident cases are the newly identified patients, with the first code within the year of interest and no codes in the 12-month pre-index period. Incidence is reported annually over the identification period.
• Annual incidence was calculated using incident cases only
• Prevalent cases are those with the first code prior to or during the year of interest and the last code during or after the year of interest. Annual diagnosed prevalence was calculated using both incident and prevalent cases

Figure 1. Study design and identification period

Results
Adults
• The adult study cohort comprised 70% female
• The annual prevalence of diagnosed overall CIndU among adults varied across years from 0.0164% (95% CI: 0.0115 - 0.0173) to 0.0227% (95% CI: 0.0218 - 0.0236) in Optum CDM (Figure 2a) and from 0.0118% (95% CI: 0.0114 - 0.0122) to 0.0206% (95% CI: 0.0200 - 0.0212) in MarketScan (Figure 2b)

Figure 2. Prevalence and Incidence of CIndU among Adults (a) Optum CDM (b) MarketScan

• Similarly, the annual incidence varied between 0.0073% (95% CI: 0.0067 - 0.0079) and 0.0103% (95% CI: 0.0097 - 0.0109) in Optum CDM (Figure 2a) and from 0.0056% (95% CI: 0.0056 - 0.0061) to 0.0093% (95% CI: 0.0089 – 0.0097) in MarketScan (Figure 2b)

• Among all cases of CIndU, symptomatic dermatographism was most common (74%, 76%) followed by cold and heat urticaria (12%, 14%) and cholinergic urticaria (9%, 10%) in Optum CDM and MarketScan, respectively

Figure 3a. Prevalence and Incidence of CIndU among Pediatrics (a) Optum CDM (b) MarketScan

• Population-based studies would be warranted to further explore the annual prevalence and incidence among adults and pediatric populations

Pediatrics
• The pediatric study cohort comprised 57% female
• The annual prevalence of overall CIndU varied from 0.0128% (95% CI: 0.0113 – 0.0144) to 0.0237% (95% CI: 0.0215 – 0.0258) in Optum CDM (Figure 3a) and from 0.0090% (95% CI: 0.0085 – 0.0089) to 0.0184% (95% CI: 0.0175 – 0.0193) in MarketScan (Figure 3b)

• Similarly, the annual incidence varied between 0.0069% (95% CI: 0.0065 - 0.0082) to 0.0109% (95% CI: 0.0099 - 0.0124) in Optum CDM (Figure 3a) and from 0.0048% (95% CI: 0.0044 - 0.0052) to 0.0088% (95% CI: 0.0082 – 0.0094) in MarketScan (Figure 3b)

• Among pediatric CIndU cases, symptomatic dermatographism was most common (68%, 69%) followed by cold and heat urticaria (24%, 23%) and cholinergic urticaria (11%,11%) in Optum CDM and MarketScan, respectively

Figure 3b. Prevalence and Incidence of CIndU among Pediatrics (a) Optum CDM (b) MarketScan

• Patients could present with multiple types of CIndUs relating to different triggers, at any one time1

Limitations
• This study reports the diagnosed prevalence and incidence of CIndUs based on active insured patients having medical encounters and results might be underestimated
• Patients might self-medicate with over-the-counter antihistamines without consulting a physician, CIndU might be undertreated

Conclusions
• This is the first study to assess prevalence and incidence of diagnosed CIndUs in large US databases among adults and pediatric populations
• Population-based studies would be warranted to further explore the annual prevalence and incidence among the general US population

References

Acknowledgments
The authors acknowledge Reena Kohli (Novartis, Hyderabad) for editorial and medical writing support. The final responsibility for the content lies with the authors.

Poster presented at the European Academy of Allergy and Clinical Immunology (EAACI) Hybrid Congress 19-12 July 2021.