

Costs and Healthcare Resource Utilisation associated with Chronic Spontaneous Urticaria: A Systematic Literature Review

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KEY FINDINGS & CONCLUSIONS

- This SLR identified comprehensive evidence on the cost, HRU and WPAI associated with CSU which indicates a substantial economic burden on patients and the healthcare system
- The burden was primarily driven by high HRU and expenses associated with therapies and inpatient costs
- This SLR highlights the need for effective therapies to alleviate the impact of CSU

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INTRODUCTION

- Chronic spontaneous urticaria (CSU) is a debilitating skin condition characterized by spontaneous appearance of itchy hives and/or angioedema for >6 weeks¹
- Available evidence indicates that patients with CSU experience impairment of sleep and cognitive function, which has a negative impact on productivity at work and daily-life functioning, and is associated with high resource utilisation²

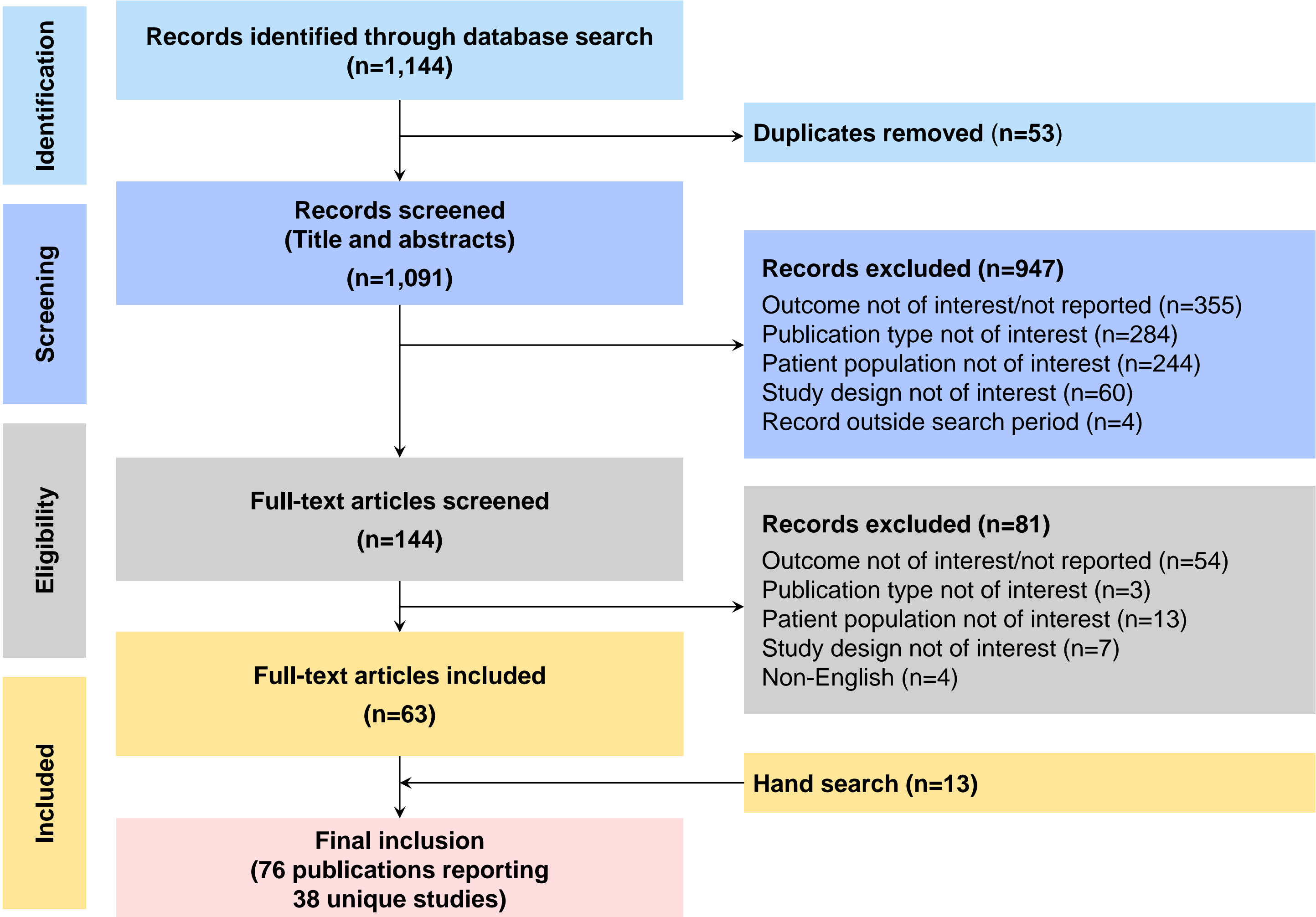
OBJECTIVE

- A systematic literature review (SLR) was conducted to summarise the published evidence on the direct and indirect costs, healthcare resource utilisation (HRU) and impact on work productivity and activity impairment (WPAI) associated with CSU

RESULTS

- A total of 1,144 records were obtained from the electronic database searches. Additionally, 13 records were identified through a hand search of conference proceedings (n=8), HTA websites (n=4) and internet search (n=1)
- A total of 38 unique studies reported across 76 publications were included for the data extraction and formed an evidence base for this SLR. A detailed PRISMA flow diagram of the SLR is presented in **Figure 1**

Figure 1. PRISMA flow for the SLR

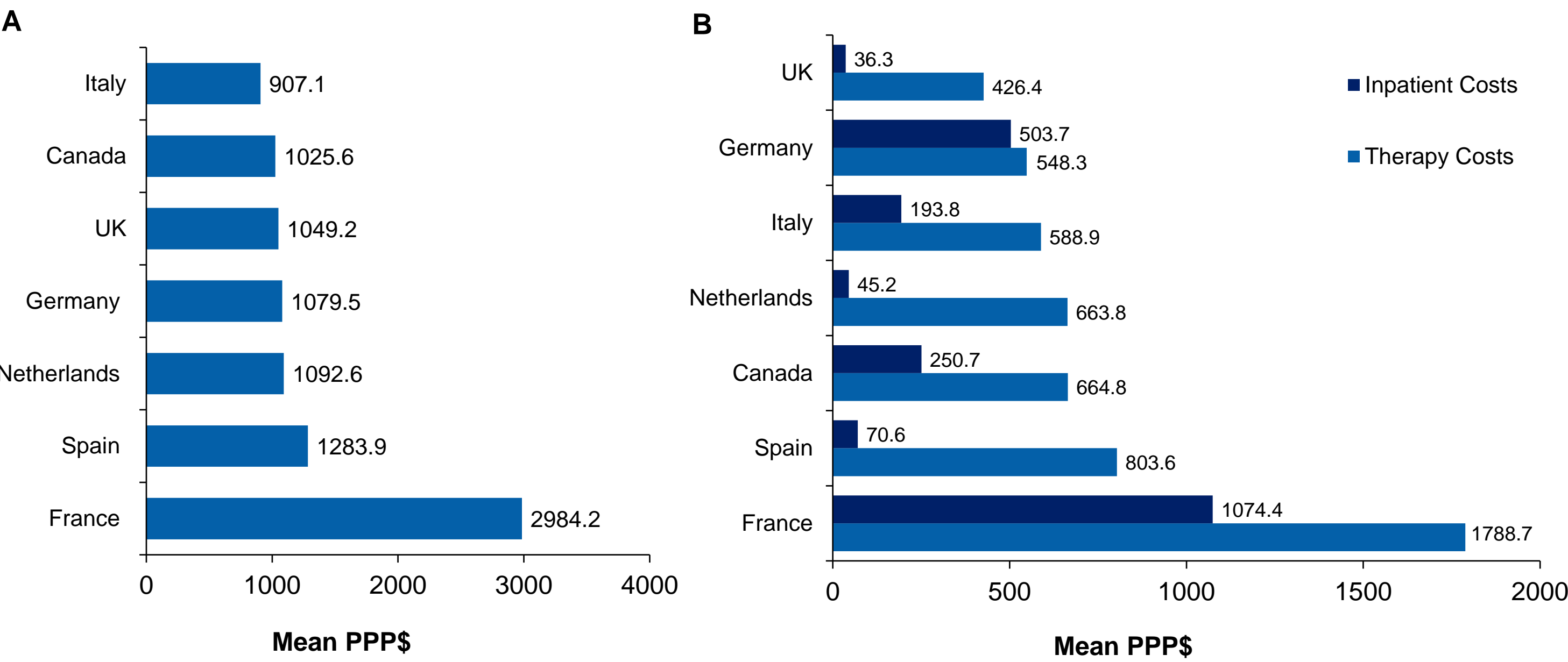


PRISMA: Preferred Reporting Items for Systematic Reviews and Meta-Analyses

Direct costs

- In Europe, the mean annual total direct cost for CSU varied from PPP\$ (Purchasing Power Parity Dollar) 907.1 in Italy to PPP\$2,984.2 in France, while Canada reported mean annual total direct cost of PPP\$1025.6 (**Figure 2A**)⁴
- The major drivers of direct costs in Europe and Canada were therapies (PPP\$426.4 - PPP\$1788.7) and inpatient costs (PPP\$36.3 - PPP\$1074.4) (**Figure 2B**)⁴
- In the USA, the mean annual total healthcare cost associated with CSU varied from US\$12,455.0 in year 2012 to US\$17,013.0 in year 2020, primarily driven by cost of outpatient visits, hospitalisations and emergency department visits⁵

Figure 2. A) Direct costs B) Cost drivers associated with CSU by countries



PPP\$: Purchasing power parity dollar; UK: United Kingdom
Note: The direct costs represent the mean total direct cost per CSU patient per year

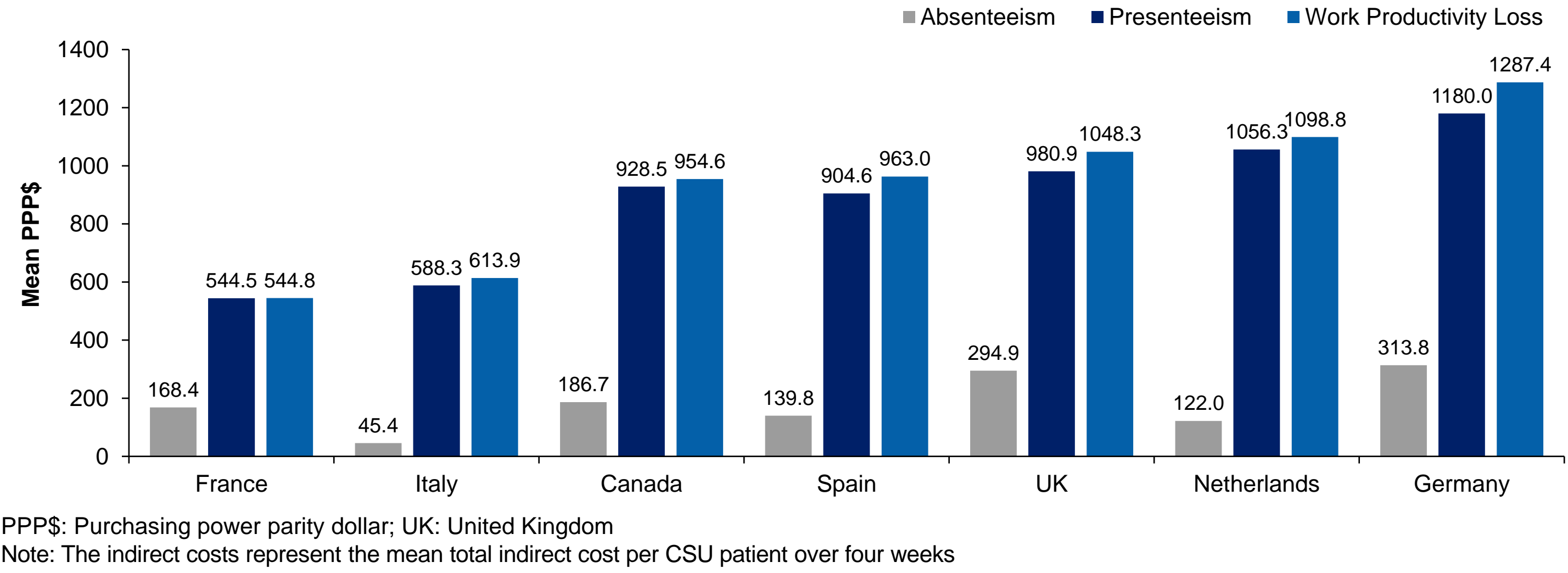
METHODS

- This systematic literature review followed Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Guidelines³
- Searches were conducted in Embase, Medline, Cochrane library, National Health Service (NHS) Economic Evaluation Database from January 2013 to December 2023
- Additional hand searches were performed on health technology assessment websites, clinical trial registries, and key congress proceedings
- The review included adult patients with CSU aged ≥18 years, who were symptomatic/ inadequately controlled with H1-antihistamine treatment. The outcomes assessed included costs, HRU and WPAI
- Two reviewers independently conducted the screening and data extractions discrepancies resolved by a third reviewer
- Evidence from the included studies was qualitatively summarized

Indirect costs

- In Europe, the mean indirect cost (loss of workdays and productivity at work) over four weeks ranged from PPP\$544.8 in France to PPP\$1,287.4 in Germany, while Canada reported mean annual total indirect costs of PPP\$954.6 (**Figure 3**)⁴
- The indirect costs in Europe and Canada were primarily driven by the cost of presenteeism (PPP\$544.5 - PPP\$1180.0)⁴

Figure 3. Indirect costs associated with CSU by countries



Healthcare resource utilisation

- HRU in terms of healthcare provider (HCP) visits, emergency department (ED) visits and hospitalisations was generally higher in the USA compared to Europe, Canada and Japan (**Table 1**)
- In Europe, the proportion of patients with HCP visits in the last 6 months varied from 95.6% to 97.6% and the mean visit per patient varied from 7.0 to 11.5. Whereas the proportion of patients with ED visits varied from 25.7% to 40.3% and hospital visits varied from 15.2% to 32.1% in the last 6 months⁶⁻⁹
- In the USA, a large proportion of patients with CSU reported HCP visits (92.0% - 97.3%), ED visits (21.0% - 60.2%) and hospitalisations (11.0% - 55.9%) in the last 6 months¹⁰⁻¹³
- In Canada, the proportion of patients with HCP visits was 82.8%, ED visits (6.1%) and hospitalisations (1.0%) in the last 1 year⁴
- In Japan, 90.0% of patients reported visiting to any HCP, and internist (54.8%) and dermatologist (43.1%) were the most frequently visited specialists^{14,15}

Table 1. Healthcare resource utilisation across Europe, USA, Canada and Japan

HRU*	EU5	USA	Canada	Japan
Any Healthcare provider visited (%)	95.6 – 97.6	92.0 – 97.3	82.8	90.0
General practitioner visited (%)	78.2	48.7 – 65.6	–	–
Allergist visited (%)	–	12.0 – 29.6	71.1	–
Dermatologist visited (%)	21.3	17.0 – 23.0	–	43.1
Emergency department visited (%)	25.7 – 40.3	21.0 – 60.2	6.1	4.2 – 6.9
Hospitalizations (%)	15.2 – 32.1	11.0 – 55.9	1.0	9.9 – 50.0

*HRU in Europe, USA and Japan are for last 6 months and Canada for last 1 year

Work productivity and activity impairment

- WPAI in terms of mean percentage of absenteeism, presenteeism, overall work impairment and overall activity impairment was higher in the USA compared to Europe, Canada and Japan (**Table 2**)
- In Europe, the mean absenteeism score varied from 10.5% to 17.9% and the presenteeism score varied from 27.4% to 39.5%. Whereas the mean overall work impairment and activity impairment scores varied from 32.6% to 44.8% and 39.5% to 45.5%, respectively^{6,7,9}
- In the USA, the mean overall work impairment and overall activity impairment scores varied from 29.0% to 73.1% and 39.0% to 62.6%, respectively^{10,12}
- In Canada, the mean absenteeism and presenteeism scores were 6.0% and 29.8%, whereas the mean overall work and activity impairment scores were 30.6% and 38.6%, respectively⁴
- In Japan, the mean overall work impairment scores were reported between 26.9% and 30.3%, whereas the mean activity impairment scores were between 26.7% and 28.5%^{14,15}

Table 2. WPAI across Europe, USA, Canada and Japan

WPAI (mean % score)	Europe	USA	Canada	Japan
Absenteeism	10.5 – 17.9	9.0 – 36.5	6.0	5.7 – 7.6
Presenteeism	27.4 – 39.5	26.0 – 67.2	29.8	24.3 – 27.2
Overall work impairment	32.6 – 44.8	29.0 – 73.1	30.6	26.9 – 30.3
Overall activity impairment	39.5 – 45.5	39.0 – 62.6	38.6	26.7 – 28.5

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Disclosures

Amitkumar Pagada, Mukhtar Ahmad Dar, GS Ramakrishna, and Ravneet Kaur Kohli are employees of Novartis Healthcare Private Limited, Hyderabad, India; Panagiotis Orfanos and Maria-Magdalena Balp are employees of Novartis Pharma AG, Basel, Switzerland.



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