Real-world uptake of SGLT2i usage in patients with heart failure and chronic kidney disease: A German claims data analysis

EPH206

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Background and Rationale

- Sodium-glucose cotransporter 2 inhibitors (SGLT2i) have emerged as a major therapeutic advance in the management of chronic diseases with high morbidity and mortality such as heart failure (HF) and chronic kidney disease (CKD). Initially developed for glycemic control in type 2 diabetes (T2DM), SGLT2i have demonstrated substantial cardiorenal benefits independent of blood glucose lowering.
- Large randomized clinical trials have consistently shown reduced risks of hospitalization for heart failure, cardiovascular death, and progression of kidney disease. [1] These findings led to regulatory approvals for use in HF and CKD regardless of diabetes status and subsequent incorporation into major international guidelines [2;3].
- The extent to which these benefits have translated into real-world clinical practice remains uncertain. Understanding treatment uptake patterns is critical for assessing implementation gaps and optimizing patient outcomes.

Methods

Data source

A cross-sectional analysis using data of the Evin Hub Profiler was conducted. The Evin Hub Profiler utilizes data from 2019 to 2023 obtained from the WIG2 benchmark database. The WIG2 benchmark database is a representative claims data base containing routinely collected claims data of the statutory health insurance (SHI) system in Germany from approximately 4 million people.

Analysis design

- HF and CKD patients were identified by the presence of a diagnosis of HF or CKD during inpatient or outpatient treatments in the respective observation year (Table 1)
- SGLT2i treatment was captured by the presence of at least one prescription of SGLT2i in respective observation year
- Results were calculated as age- and gender-standardized extrapolations to estimate the proportion of HF and CKD patients treated with SGLT2i from 2019–2023. Standardization was implemented based on population statistics of the Federal Statistical Office of Germany [4]
- Results were stratified by disease, age group, and gender to evaluate patterns of therapy adoption across patient subgroups.

Table 1: Diagnosis codes used for the identification of HF and CKD patients

disease	ICD-10-GM	disease	ICD-10-GM
CKD	• N18 • I12.0 • I13.1 • I13.2 • N08.3 in combination with E10.2, E11.2, E13.2 or E14.2	HF	• I50 (terminal) • I50.01 • I50.1 • I50.9 • I11.0 • I13.0 • I13.2

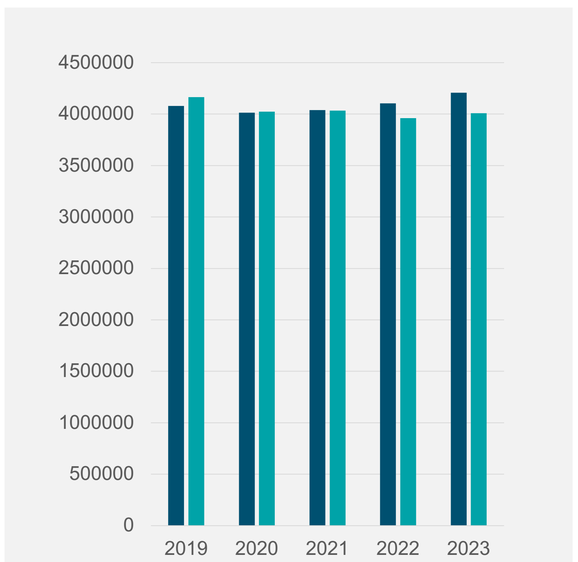

Figure 1: Number of patients in Germany

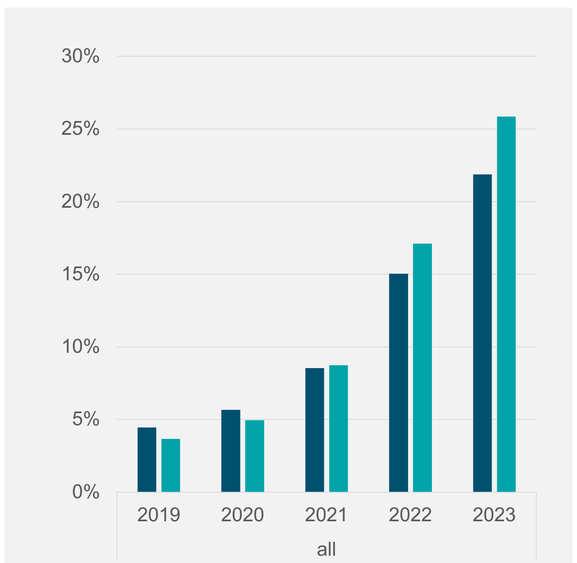

Figure 2: Proportion of patients treated with SGLT2i

Limitations

ICD-10 codes in Germany do not allow to distinguish between Heart failure with reduced ejection fraction (HFrEF) and Heart failure with preserved ejection fraction (HFpEF). While approval for HFrEF was in 2020 [5], recommendation/approval of SGLT2i in HFpEF was only in 2022/2023 [6]

References

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Results

- Estimated patient numbers for Germany remained relatively stable between 2019 and 2023 for both the CKD and HF populations (Figure 1)
- SGLT2i treatment among CKD patients increased from 4.5% in 2019 to 21.9% in 2023 (Figure 2)
- SGLT2i treatment in HF patients rose from 3.7% in 2019 to 25.8% in 2023. (Figure 2)
- The most pronounced increase occurred between 2021 and 2022, aligning with expanded regulatory approvals and updated clinical practice guidelines.
- Despite these upward trends, overall treatment penetration remains modest compared with the eligible patient population.
- SGLT2i treatment rates increased for both patients with and without T2DM (Figure 3)
- SGLT2i use was higher in male patients and increased steadily with age, peaking among aged 60–79 years among female and 50–79 years among male patients. (Figure 4)
- Male patients consistently demonstrated higher treatment rates than females across all adult age groups, suggesting potential gender disparities in prescribing patterns.

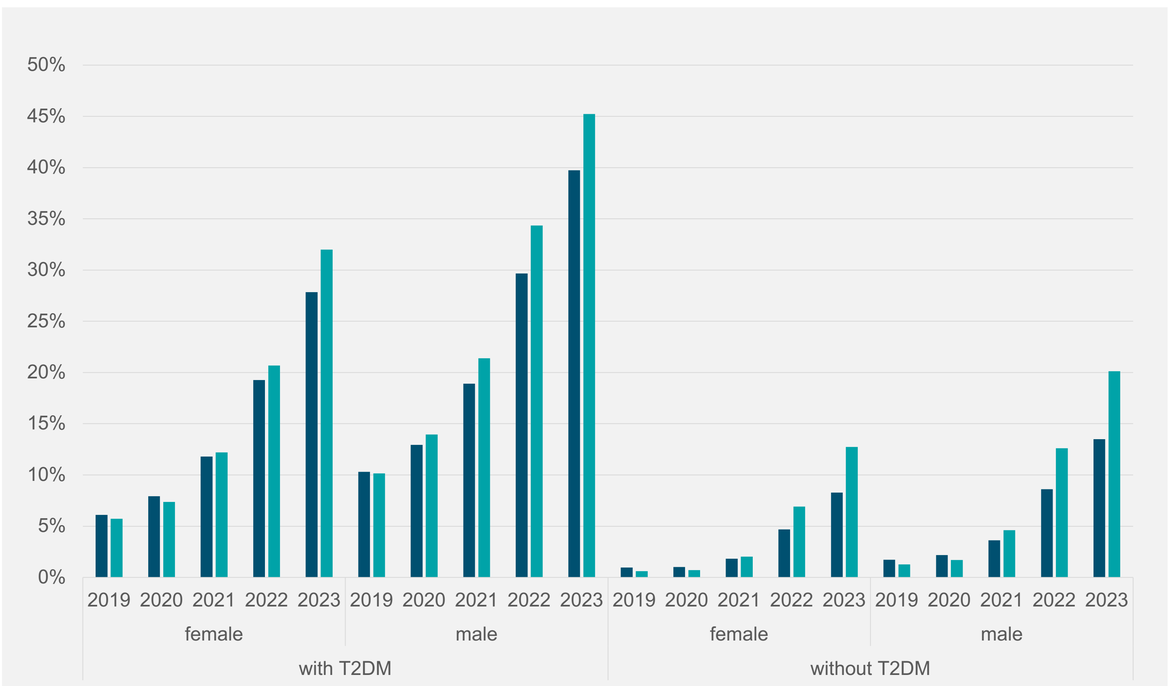

Figure 3: Proportion of patients treated with SGLT2i, stratified by gender and T2DM status

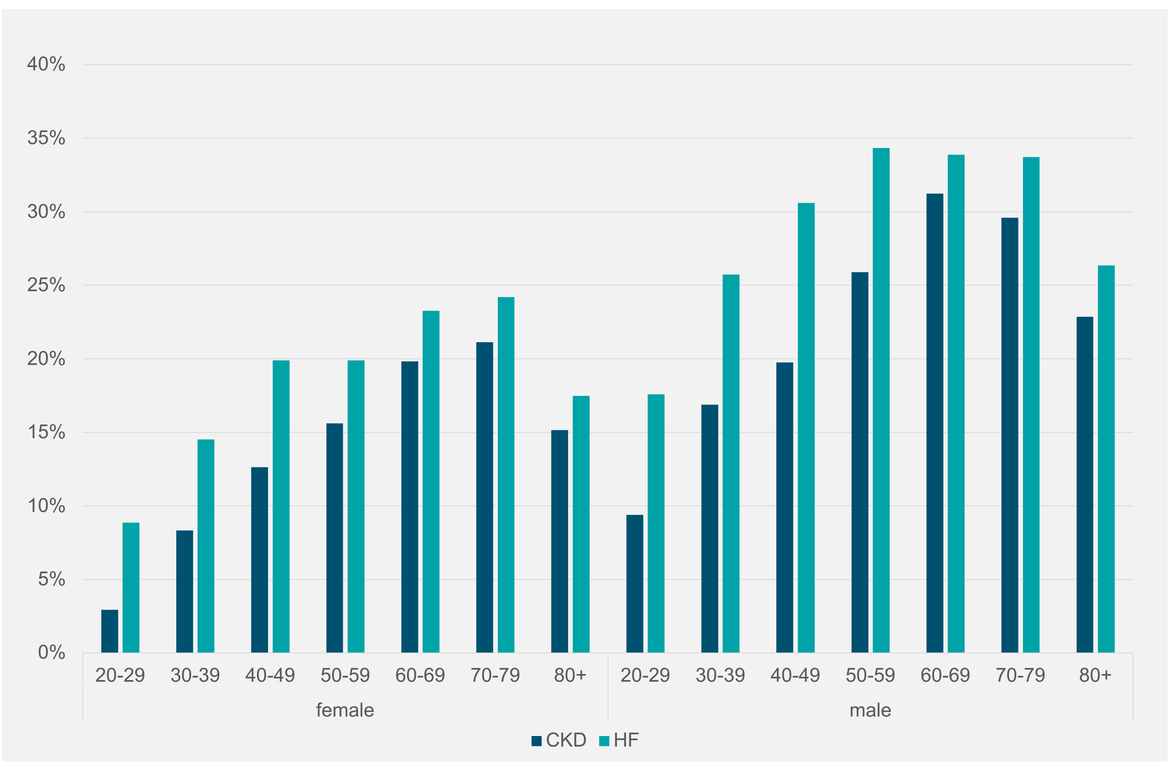

Figure 4: Proportion of patients treated with SGLT2i in 2023, stratified by gender and age group

Conclusions and Outlook

- Real-world adoption of SGLT2 inhibitors has accelerated since their approval for HF and CKD, jet remains far from optimal.
- By 2023, approximately one in four patients (HF) or one in five patients (CKD) were receiving SGLT2i therapy.
- These findings indicate growing clinician awareness and acceptance but also highlight a persistent treatment gap that limits the population-level benefits demonstrated in clinical trials.
- Further efforts are required to promote broader utilization through educational initiatives, simplified prescribing pathways, and improved patient access.
- Expanding implementation strategies could help maximize the transformative potential of SGLT2 inhibitors to reduce cardiovascular and renal burden in routine clinical care.

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Conflict of interest: Nils Kossack, Ines Weinhold and Marco Müller are employees of WIG2 GmbH. M. Schultze and M. Pignot are employees of ZEG Berlin GmbH. D. Häckl is employee of University Leipzig and WIG2 GmbH. WIG2 GmbH and ZEG Berlin GmbH are private research institutes which conduct observational studies for pharmaceutical companies.

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