Gaps in CKD Awareness Among People with Type 2 Diabetes

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Background and Aims

Diabetes is one of the most common causes of CKD in adults; ~ one in three people with diabetes may have CKD [1]. In the 2021 Standards of Medical Care in Diabetes, the American Diabetes Association recommends at a minimum, annual screenings of urinary albumin and glomerular filtration rate for people with type 2 diabetes (T2D), regardless of treatment [2]. Previous studies have identified that the awareness of CKD among people with T2D and their healthcare providers is low, as is proper testing and diagnosis, particularly for early stage CKD [3-5].

The aim of this patient survey was to gauge the awareness and understanding of CKD in people with T2D and their perception of the role of renoprotective diabetes therapies.

- How aware are individuals in the T2D community of the risk of CKD?
- How aware are individuals with T2D of renoprotective diabetes therapies? How willing are they to take them?
- Do people in the T2D community know their renal health numbers? How does this compare to knowledge about cardiovascular disease (CVD) in diabetes?
- What percentage of people with T2D are taking steps to mitigate their risk of CKD?
- Are primary care healthcare providers talking to patients with diabetes about the risk of CKD?

Methods

In February 2021, 1,021 people living with type 2 diabetes in the dQ&A United States Patient Panel responded to a 30-question online survey. Respondents received $10 USD for completing the survey. The survey assessed perceptions, knowledge, HCP engagement, and lifestyle behaviors related to CKD and CVD. Additional health and demographic data were collected (**Table 1**). Data was collected with Qualtrics, prepared with IBM SPSS, and analyzed in MarketSight. Statistical testing was performed using two-proportion z-tests.

Demographic Data	n	%
BMI (kg/m^2)		
Less than 25	133	13
25-29.9	260	26
30-34.9	280	28
35-39.9	182	18
Greater than 40	162	16
Medication		
Taking Insulin	435	43
On a GLP-1 receptor agonist	387	37
On a SGLT-2 inhibitor	396	38
On other oral medications	548	64
A1c		
Less than 7.0%	531	55
7.1%-8.0%	299	31
Greater than 8.0%	133	14
Age		
18-44	60	6
45-54	129	13
55-64	273	27
65-74	439	43
Older than 75	120	12
Race/Ethnicity		
White	816	83
Black	93	9
Hispanic	43	4
Other	28	3

TABLE 1. Baseline health characteristics and demographics of respondents.

Results

Awareness of CKD Risk and Renoprotective Diabetes Drugs

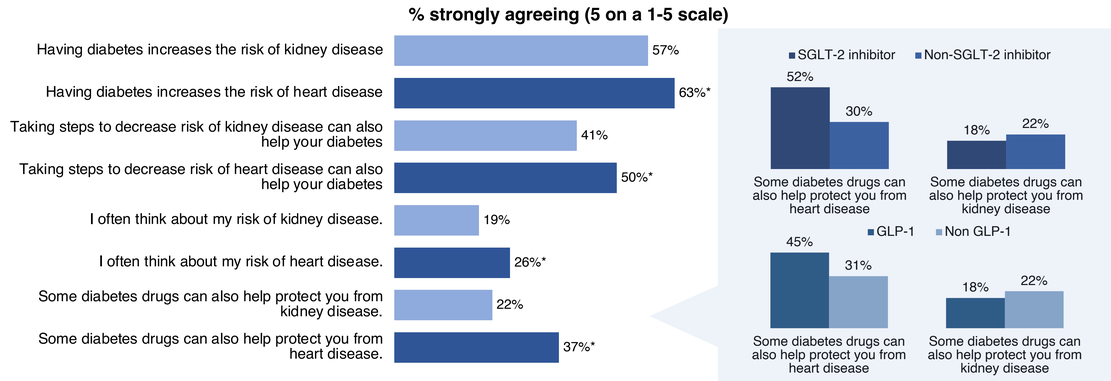
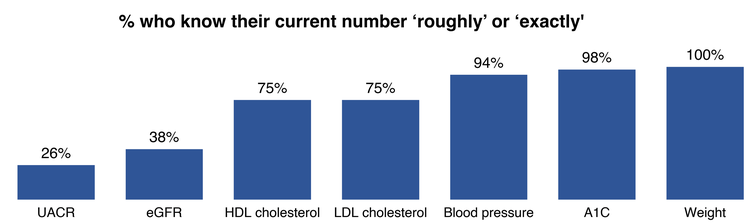


FIGURE 1. Patients' Awareness of the Link between T2D and CKD and Awareness of Renoprotective Therapies. Participants were asked to rate their agreement with statements assessing their awareness of the link between CKD and T2D and awareness of protective therapies for CKD on a scale from 1-5, where 1 was "strongly disagree" and 5 was "strongly agree." People with T2D are generally less aware of CKD risks and therapies than CVD risks and therapies. Even among those currently taking a renoprotective drug, awareness of cardioprotective benefits was higher than that for renoprotective benefits. Statistical testing performed between statements regarding CKD and CVD. * indicates $p<0.05$.

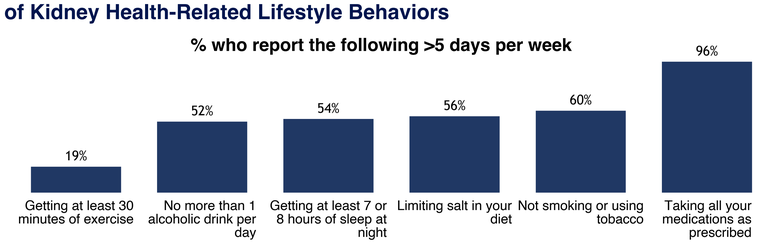
Knowledge of Diabetes and Kidney Metrics

FIGURE 2. Knowledge of Key Renal Health Indicators. Participants were asked how well they know their most recent numbers for a collection of health indicators. The percentage of patients who knew their metric "roughly" or "exactly" was significantly higher for health indicators closely associated with diabetes and CVD (such as A1C, weight, and blood pressure) than those associated with CKD (such as UACR and eGFR).



Consistency of Kidney Health-Related Lifestyle Behaviors

FIGURE 3. Adherence to Kidney Health-Related Lifestyle Behaviors. Participants were asked to indicate how consistently they are able to maintain renal health-promoting behaviors in a typical week. Responses indicated room for improvement, with proper exercise remaining a major challenge.



Risk Discussion with Healthcare Providers

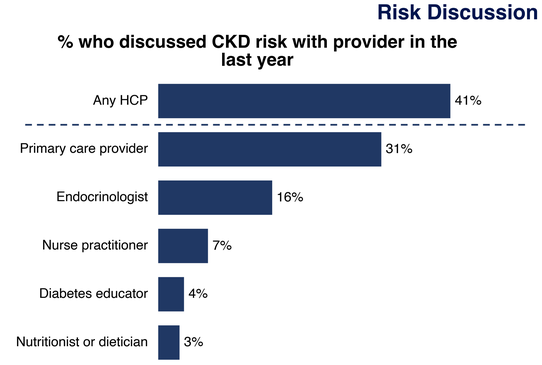


FIGURE 4. Discussions of CKD Risk with Healthcare Providers. Overall, 41% of participants report a discussion about CKD risk with a healthcare provider for diabetes care. Although respondents who see an endocrinologist were more likely to have discussed kidney disease risk with them, limited access to endocrinologists for people with T2D means that conversations with PCPs are nearly twice as likely to be taking place.

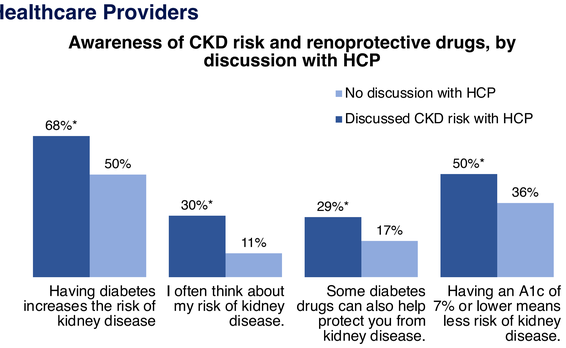


FIGURE 5. Impact of HCP Discussion on Awareness of the Link between T2D and CKD and Awareness of Renoprotective Therapies. Participants who have discussed their CKD risk with a healthcare provider were more likely to report awareness of the link between diabetes and CKD, were more concerned about their risk, and were more aware of renoprotective drugs. Statistical testing performed between those who had and had not discussed CKD risk. * indicates $p<0.05$.

Conclusions

These data highlights a serious gap between T2D patients' awareness of CKD risks and protective therapies, such as SGLT-2 inhibitors and GLP-1 receptor agonists, and those of CVD. There is potential to improve awareness of the renoprotective capacity of SGLT-2 inhibitors and GLP-1 receptor agonists, with only 22% of patients strongly agreeing that some diabetes drugs can protect you from kidney disease. Those who had discussed CKD risk with a healthcare provider were more likely to be aware of the renal benefits associated with some diabetes medications – but this awareness was still low at only 29%.

To prevent CKD and improve outcomes, this study emphasizes the need for better patient education on the connection between T2D and CKD. There is a severe lack of education specifically around a patient's risk for CKD, but educational efforts must not stop at awareness; they should also suggest achievable goals for body weight, A1C, blood pressure, cholesterol, and importantly eGFR and uACR.

A potential limitation is that in obtaining a robust sample of SGLT-2 inhibitor and GLP-1 receptor agonist users, approximately 55% of the respondent pool were on at least one of these agents. As a result, there is increased likelihood that our cohort has greater access than the general US T2D population to these agents and our results may overestimate patients' knowledge and awareness of CKD, further underscoring the need for greater education.

Implications & Future Directions

Though the connection between diabetes and CKD is well-understood, and renoprotective therapies may aid in addressing this risk, these therapies are not accessible for many individuals. In addition, our survey demonstrates that patients are not adequately aware of their risk for CKD and the potential renoprotective benefits of certain glucose-lowering medications.

There is a discrepancy between patients' knowledge and awareness of CKD and CVD risks and this discrepancy is not being addressed by HCPs. Though some respondents recognize CVD risk, take steps to decrease risk, and actively track and know key CVD metrics, this does not translate when it comes to CKD risk and screening.

This work prompts future education for people with diabetes on the CKD risks they face and the treatment options and therapies available to them. In particular, HCPs have the opportunity to guide progress here by initiating conversations with patients, providing them with ample information on the benefits of SGLT-2 inhibitor and GLP-1 receptor agonist therapies, increasing screenings for CKD, and discussing these results with patients.

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