CLINICAL PROFILE AND KIDNEY FUNCTION OF SGLT2I AND GLP-1RA NEW USERS WITH CKD AND TYPE 2 DIABETES IN DENMARK:

A NATIONWIDE POPULATION-BASED STUDY PART OF THE FOUNTAIN PLATFORM

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Short Oral Discussion Event C

SO 75 Clinical outcomes and biomarkers in diabetic kidney disease

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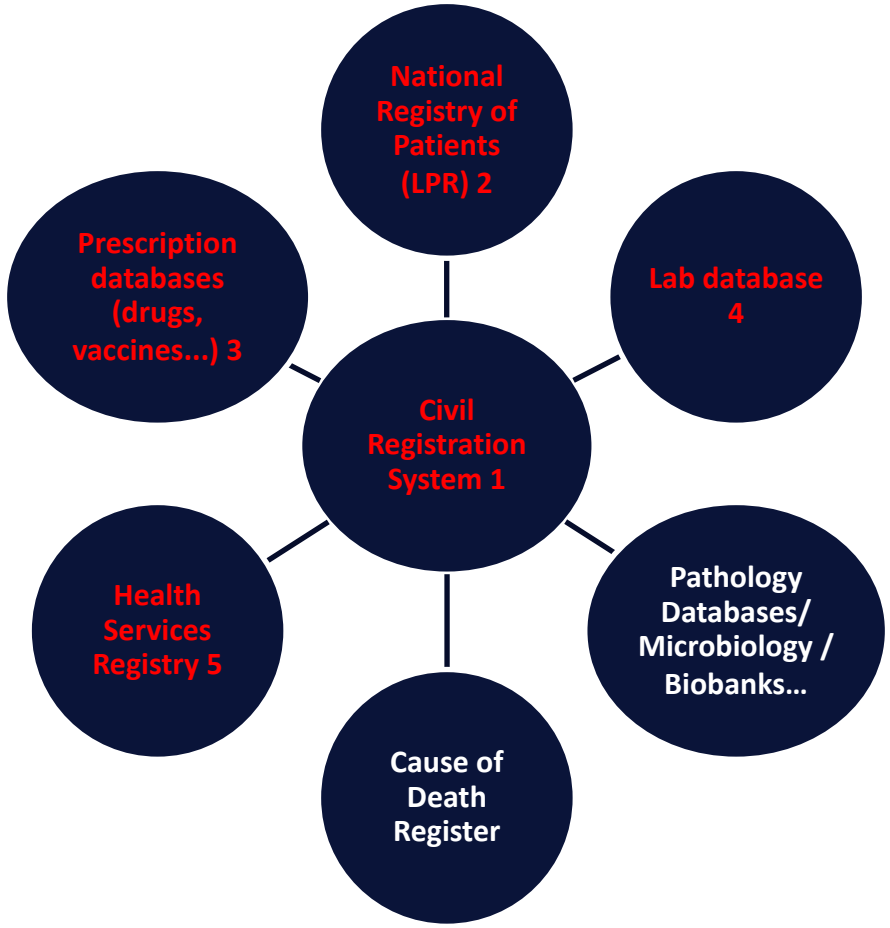
Introduction

- The clinical landscape for the treatment of patients with chronic kidney disease (CKD) and type 2 diabetes (T2D) is rapidly evolving!

➢ **Can we use databases to characterize patients with CKD and T2D who initiated an SGLT2i or GLP-1RA in a real-world clinical setting?**

Methods



- Nationwide population-based cohort study based on prospective healthcare databases for all of Denmark (pop 5.9 M), 2012-2021
- People with both CKD and T2D identified by combination of lab values, hospital diagnosis codes, and prescriptions for T2D drugs
- CKD defined as one of the following:
  - 2 eGFR test results between 15 and < 60 mL/min/1.73 m2, *or*
  - 2 urinary albumin-to-creatinine ratio (UACR) tests ≥ 30 mg/g, *or*
  - CKD hospital diagnosis
- Among CKD+T2D individuals, we observed:

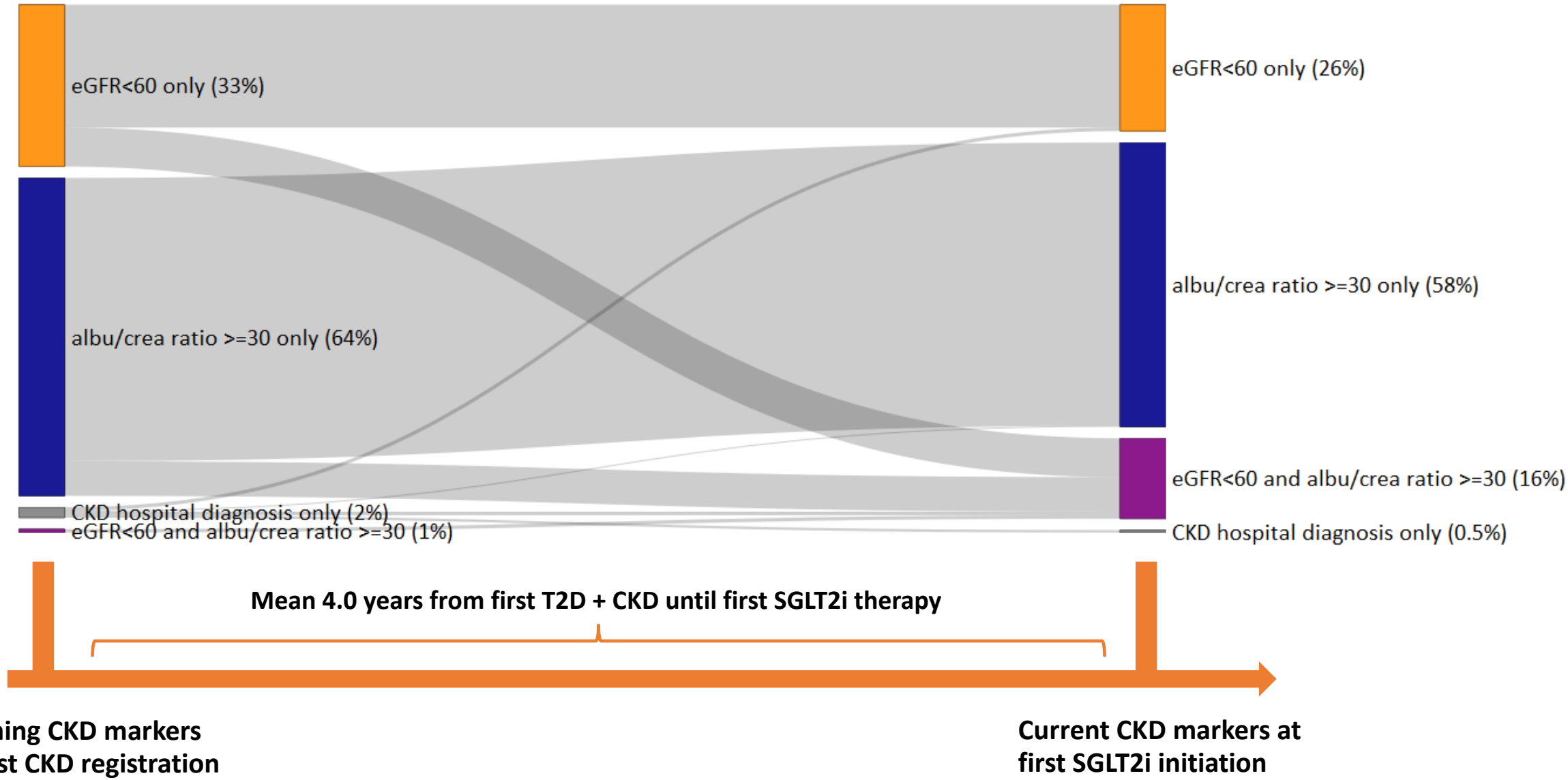
  21,739 new users of SGLT2i and 18,929 new users of GLP-1RA!

1 Schmidt M et al., Eur J Epidemiol 2014;29:541–549
2 Schmidt M et al., Clin Epidemiol. 2015;7:449-90
3 Pottegård A, et al., Int J Epidemiol. 2017; 46(3): 798–798f
4 Arendt JFH et al., Clin Epidemiol. 2020; 12: 469–475.
5 Andersen JS et al. Scand J Public Health. 2011 Jul;39(7 Sup):34-7
-> References for most Danish registries, see: http://www.dsfe.dk/danish-registries/

Results

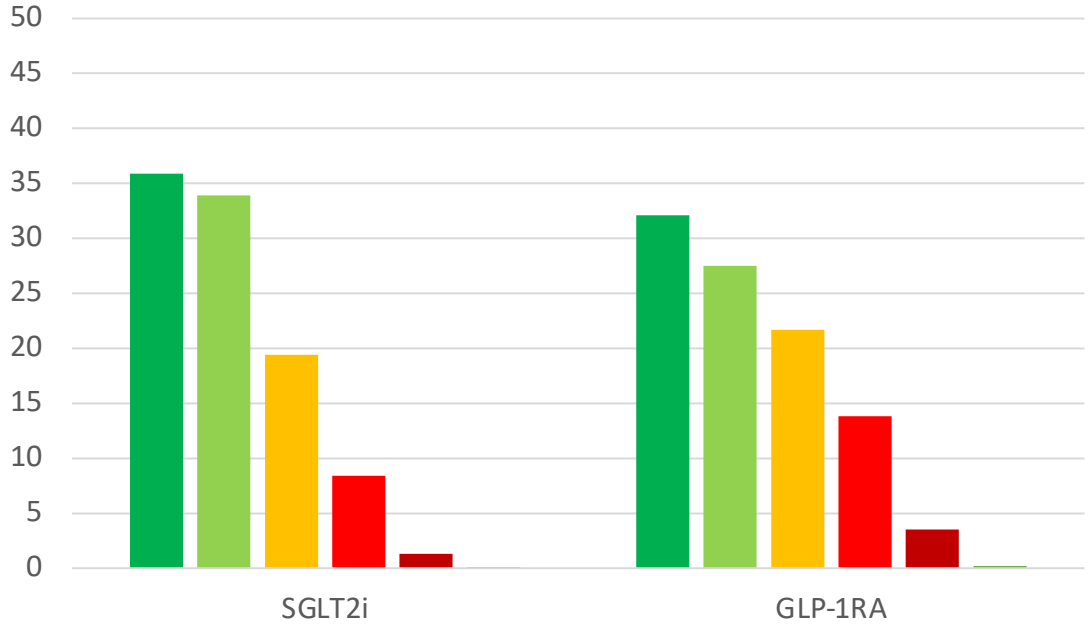
	New user cohorts with T2D and CKD (2012-2021)	
	SGLT2i initiators	**GLP-1RA initiators**
N	**21,739**	**18,929**
Age, mean	66.5 y	66.2 y
Female	35.5%	40.6%
Duration of CKD, mean	3.9 y	4.0 y
Duration of T2D, mean	11.2 y	11.6 y
Atherosclerotic cardiovascular disease	44.5%	41.8%
Heart failure	16.6%	12.9%
Hypertension	80.8%	80.3%
T2D therapy (last 180 days)		
No GLD	9.7%	12.6%
GLD monotherapy	41.6%	38.4%
GLD polytherapy	48.7%	49.0%
Insulin use	30.6%	38.7%
Hba1c, median	65 mmol/mol	67 mmol/mol
CKD therapy (last 90 days)		
SGLT2i use	0%	22.1%
GLP-1RA use	21.7%	0%
sMRA use	8.9%	7.6%
ACEi or ARB use	61.2%	59.5%

Kidney dysfunction when CKD first registered, versus when therapy initiated (only SGLT2i data shown, similar pattern observed among GLP-1RA initiators)



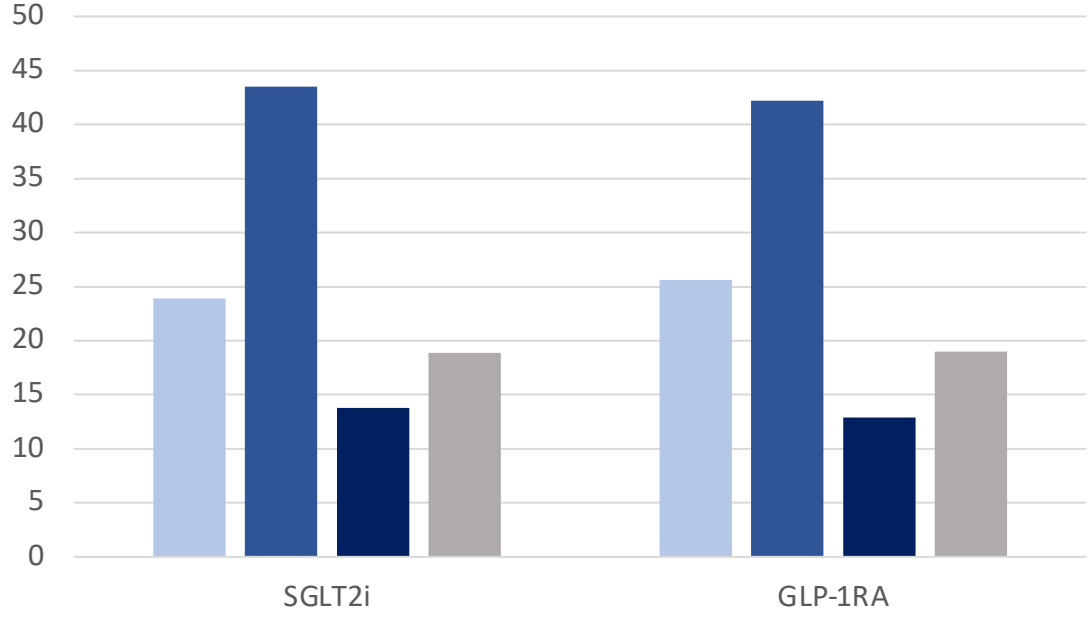
CKD stages at time of SGLT2i or GLP-1RA initiation

eGFR based CKD stages (% of total)



- Stage 1: ≥ 90, normal or high
- Stage 2: 60-89, mildly decreased
- Stage 3a: 45-59, mildly to moderately decreased
- Stage 3b: 30-44, moderately-severely decreased
- Stage 4: 15-29, severely decreased
- Stage 5: < 15 OR treated by dialysis, kidney failure

UACR based CKD stages (% of total)



- A1: < 30, normal to mildly increased
- A2: 30-300, moderately increased (formerly 'microalbuminuria')
- A3: > 300, severely increased (includes nephrotic syndrome, > ~2,000)
- No assessment of ACR recorded in year before index date

Conclusions: Key summary points

1. Using Danish healthcare data, we could establish a cohort of patients with T2D and CKD applicable for clinical research
2. We observed that in this group, initiators of SGLT2i and GLP-1RA shared many similarities, both with respect to their T2D and CKD
3. Defining CKD by a combination of eGFR and UACR values yielded a population with a high burden of albuminuria

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