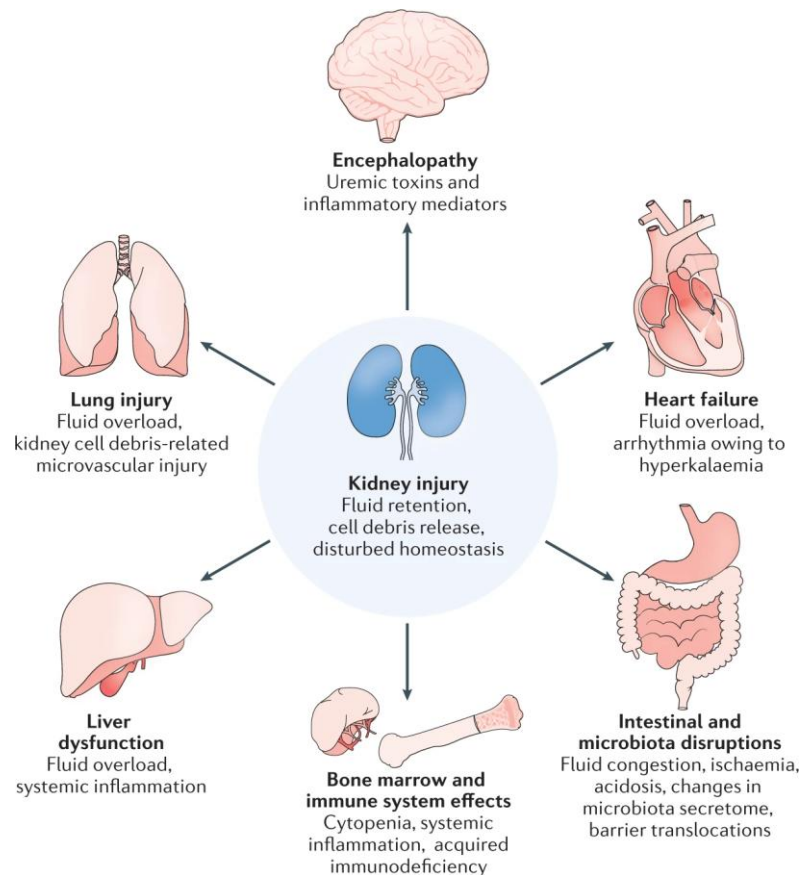


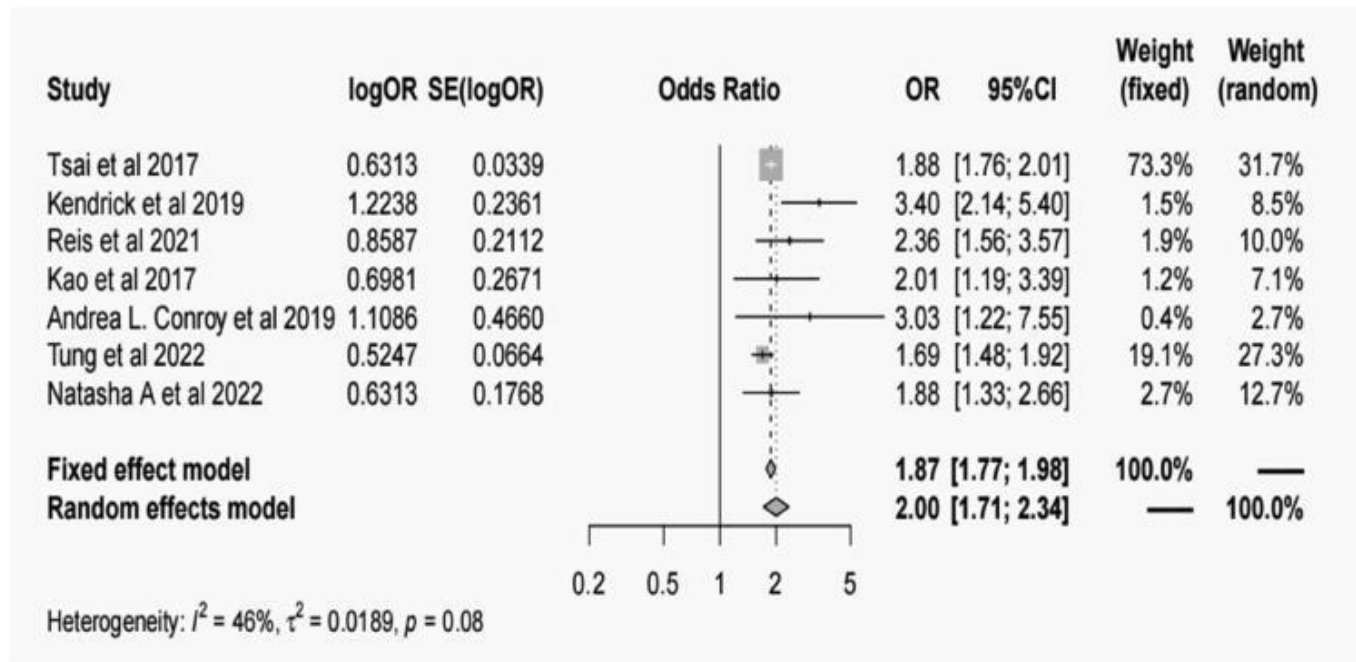
Comparative Effectiveness of SGLT-2 Inhibitors and GLP-1 Receptor Agonists on the Risk of Incidental Dementia After Acute Kidney Injury: A Target-Trial Emulation

Presenter: Ying-Ru Chen, National Taiwan University Hospital

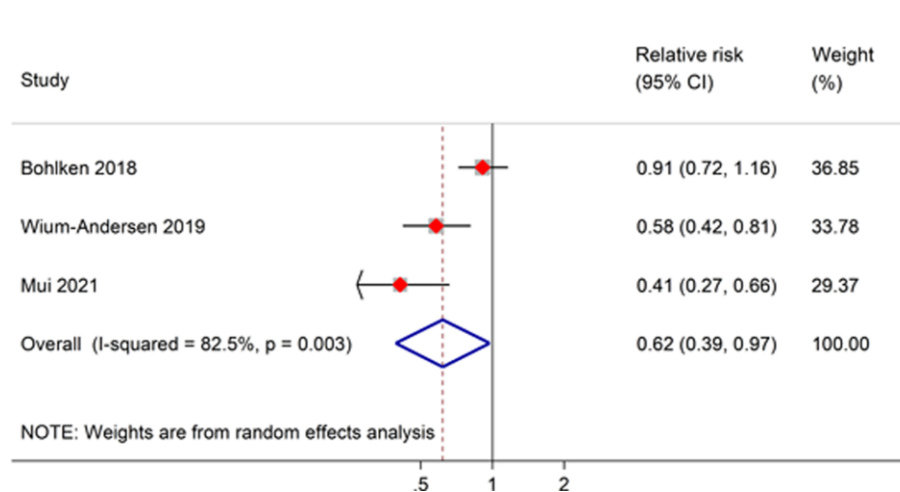


The organ damage and increased mortality associated with AKI impose a significant economic and health burden

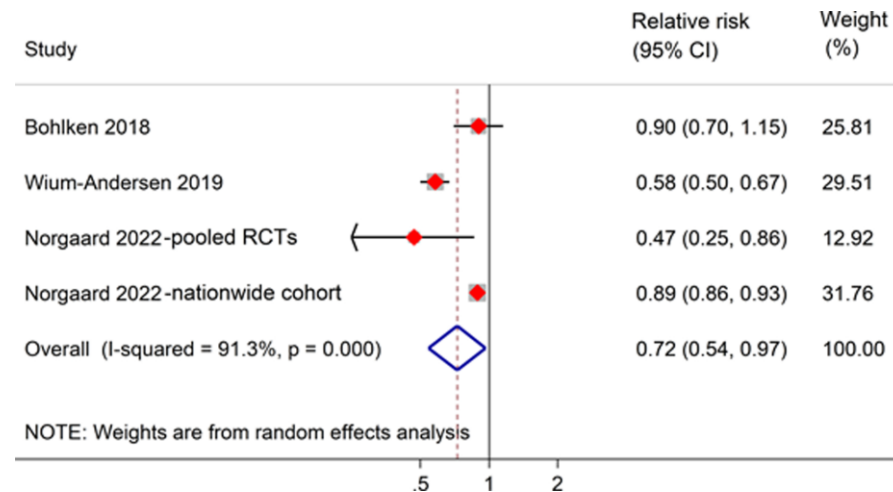
AKI and Dementia



Newer Glucose-Lowering drugs and Dementia



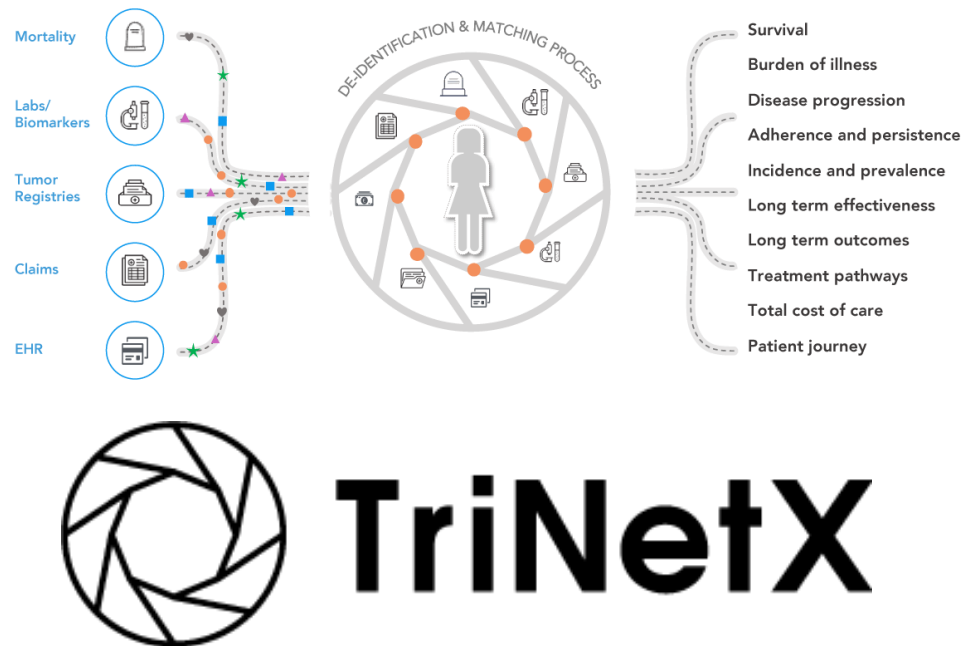
SGLT2i



GLP-1 RA

TriNetX Database

- Global health research network and platform
- Electronic health records (EHR), claims data, and other **real-world data** (RWD) from hospitals, clinics, health systems, and research institutions



TriNetX

<https://trinetx.com/solutions/live-platform/networks/>

Study Design

2015~2024

Discharge

Dementia
All caused mortality
MACE
Kidney Events

SGLT2i vs GLP-1 RA

Analysis

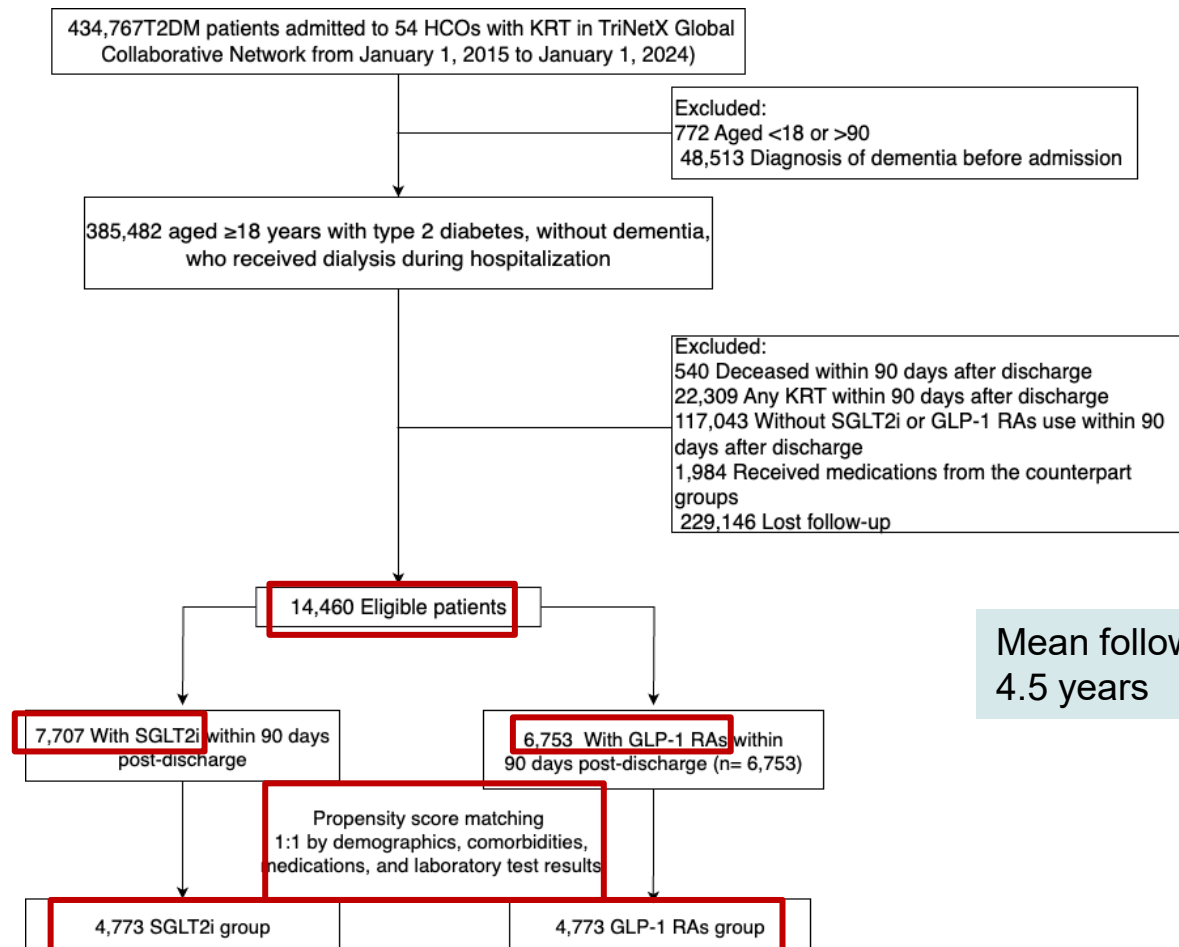
T2D 18-90 y
Ever dialysis,
without dementia

D -90

Exclude any dialysis
or deceased

D0

5 yr

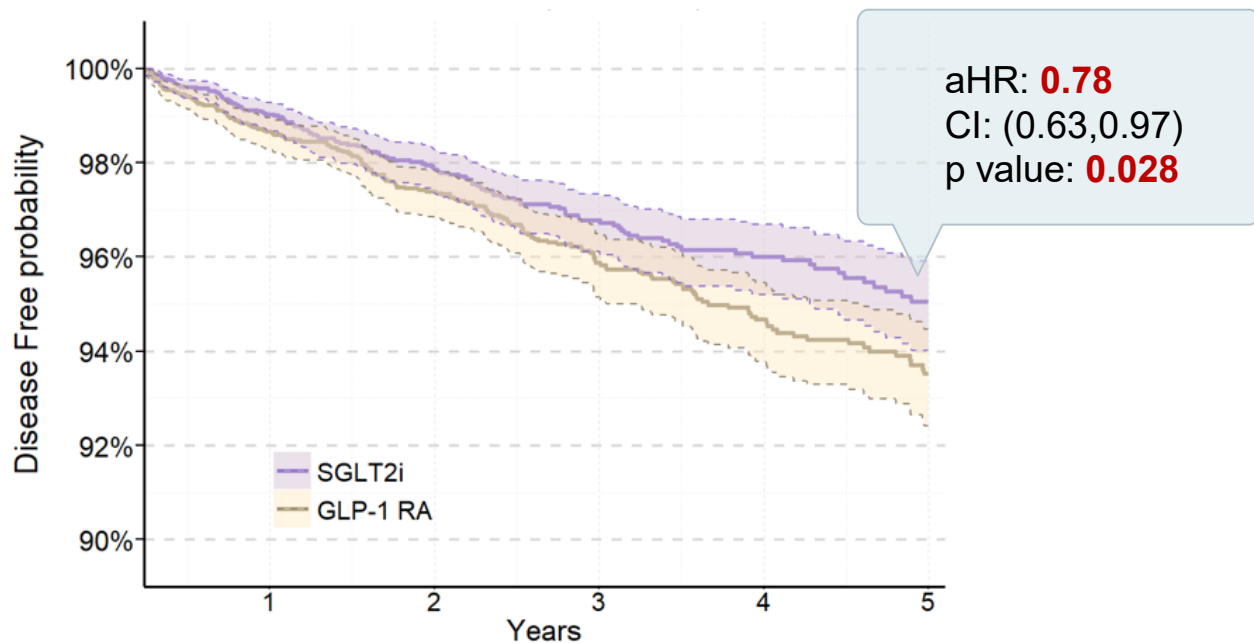


Mean follow up duration:
4.5 years

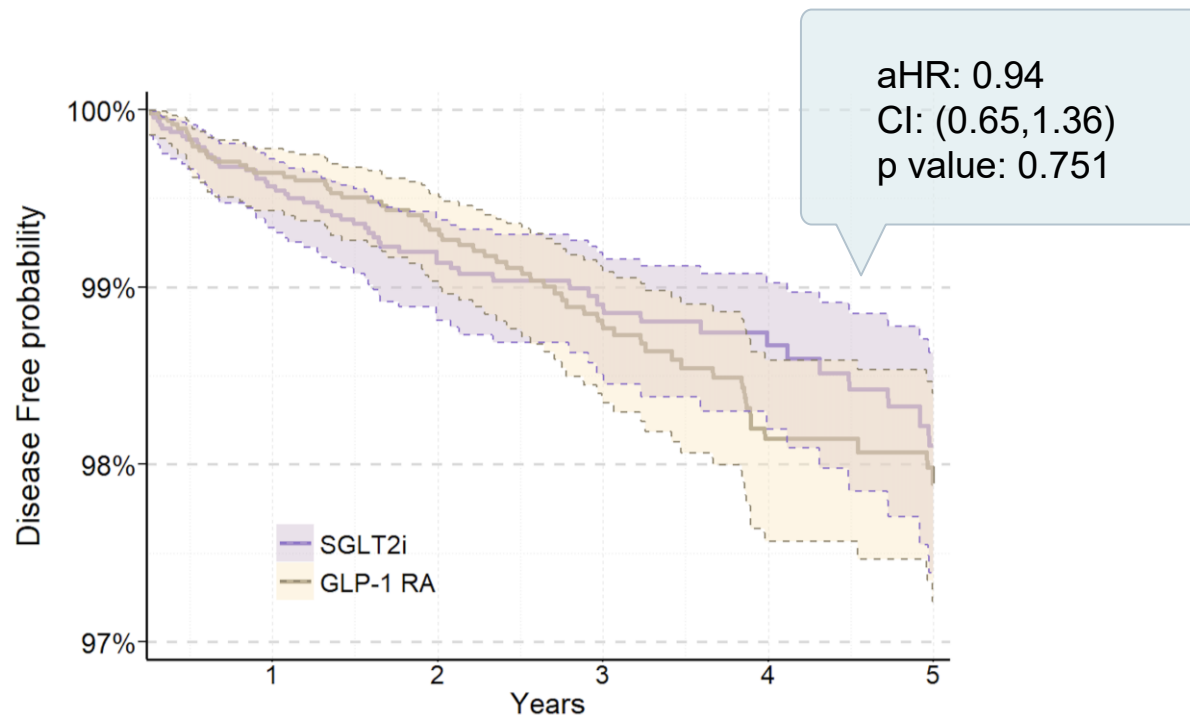
Introduction	Methods	Results	Discussion	Limitations	Conclusions
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	Before matched			After matched		
	SGLT2i users (n=7,707)	GLP-1RAs users (n=6,753)	ASMD	SGLT2i users (n=4,773)	GLP-1RAs users (n=4,773)	ASMD
Demographic						
Age, years	63.6± 12.7	58.9 ± 13.6	0.354	61.9± 12.8	60.9 ± 13.2	0.080
≥ 65	3,807 (49.4%)	2,445 (36.2%)	0.269	2,067 (43.3%)	2,032 (42.6%)	0.015
Male	4,744 (61.6%)	3,211 (47.5%)	0.284	2,624 (55.0%)	2607 (54.6%)	0.007
Medication, n (%)						
OADs						
Metformin	3,946 (51.2%)	3,811 (56.4%)	0.105	2,663 (55.8%)	2,644 (55.4%)	0.008
DPP-4i	1,005 (13.0%)	647 (9.6%)	0.109	583 (12.2%)	558 (11.7%)	0.016
Sulfonylureas	1,623 (21.1%)	1,427 (21.1%)	0.002	1,059 (22.2%)	1,064 (22.3%)	0.003
Antihypertensive medications						
Antihypertensives	2,413 (31.3%)	1,742 (25.8%)	0.122	1,338 (28.0%)	1,334 (27.9%)	0.002
Agents acting on the renin-angiotensin system	5,804 (75.3%)	4,561 (67.5%)	0.173	3,371 (70.6%)	3,337 (69.9%)	0.016
Laboratory at AKD						
eGFR [mL/min/1.73m2]	73.5 ± 32.5	78.8 ± 34.2	0.157	77.5 ± 34.5	76.6 ± 33.8	0.027
<45	3,290 (39.7%)	2,639 (36.4%)	0.068	1,830 (36.9%)	1,836 (37.1%)	0.003
HbA1C	8.2 ± 2.2	8.7 ± 2.5	0.229	8.5 ± 2.3	8.5 ± 2.4	0.030
≥ 8 %	3,232 (41.9%)	3,679 (54.5%)	0.253	2,383 (49.9%)	2,353 (49.3%)	0.013
7-8 %	2,211 (28.7%)	1,918 (28.4%)	0.006	1,383 (29.0%)	1,374 (28.8%)	0.004
BMI						
≥ 30 kg/m2	3,930 (51.0%)	4,337 (64.2%)	0.270	2,717 (56.9%)	2,711 (56.8%)	0.003

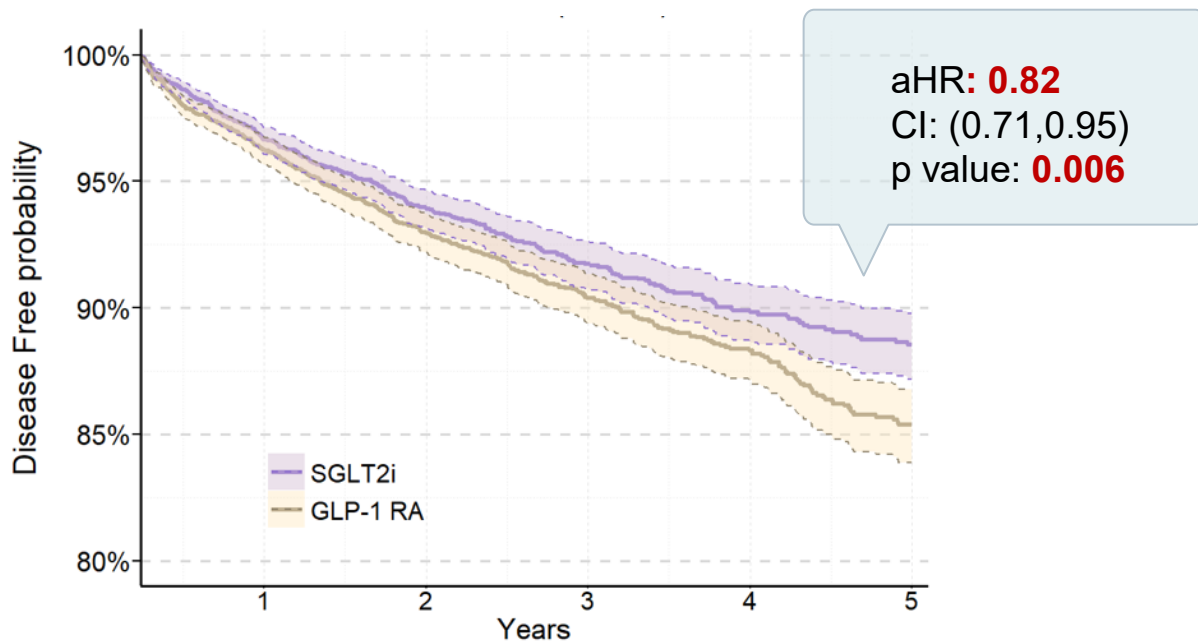
Patients prescribed **SGLT2i** demonstrated a significantly lower risk of **degenerative dementia** compared to GLP-1RAs users



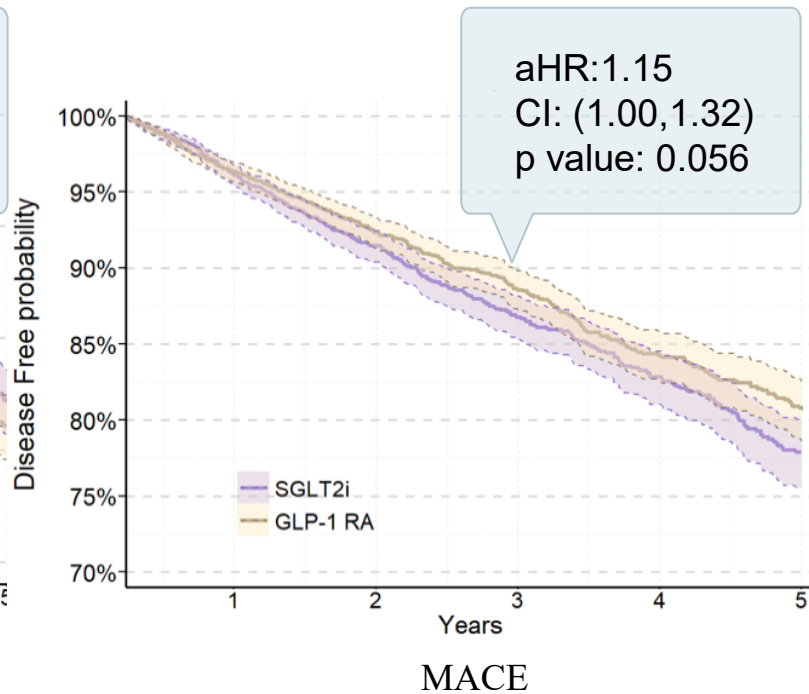
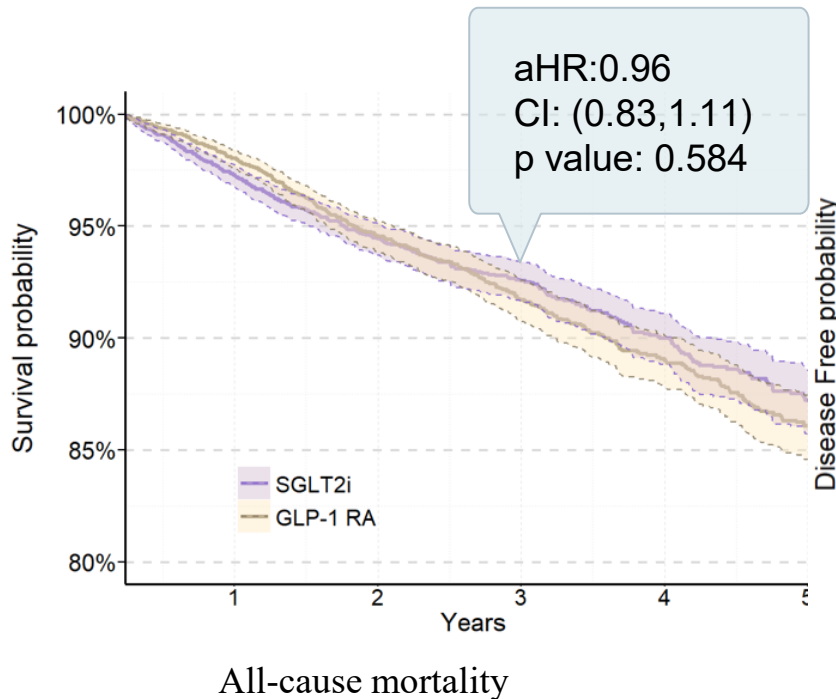
There was no significant difference in vascular dementia between the two groups.



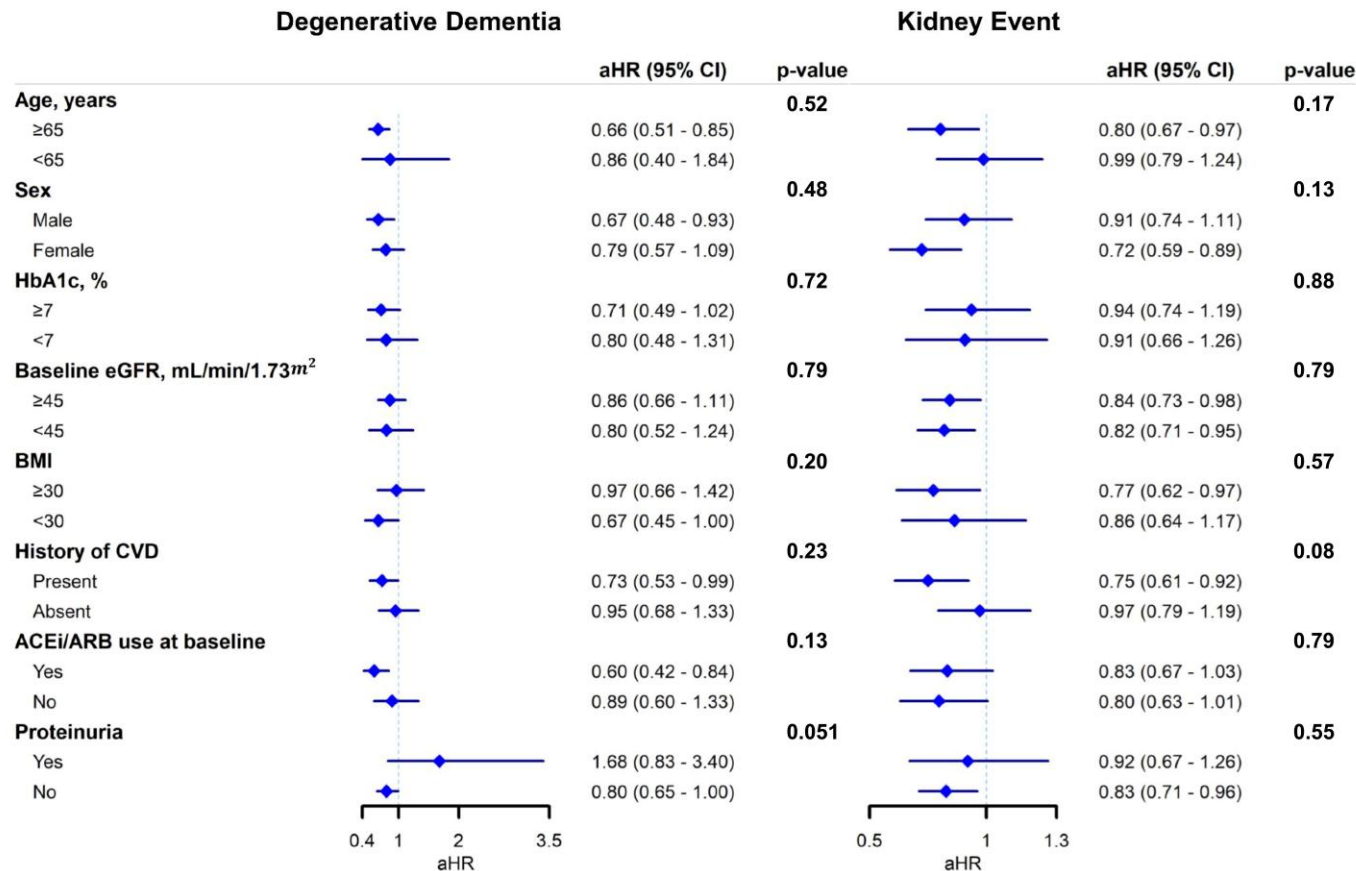
Patients prescribed **SGLT2i** demonstrated a significantly lower risk of **Kidney events** compared to **GLP-1RAs** users



There was no significant difference in all-cause mortality and MACE between the two groups.



Subgroup analysis



Sensitivity analysis

	Degenerative Dementia aHR (95%CI)	P value
Positive exposure control		
SSRI	1.45 (1.33,1.58)	<0.0001
Negative exposure control		
Metformin	0.93 (0.86,1.02)	0.126

Introduction	Methods	Results	Discussion	Limitations	Conclusions
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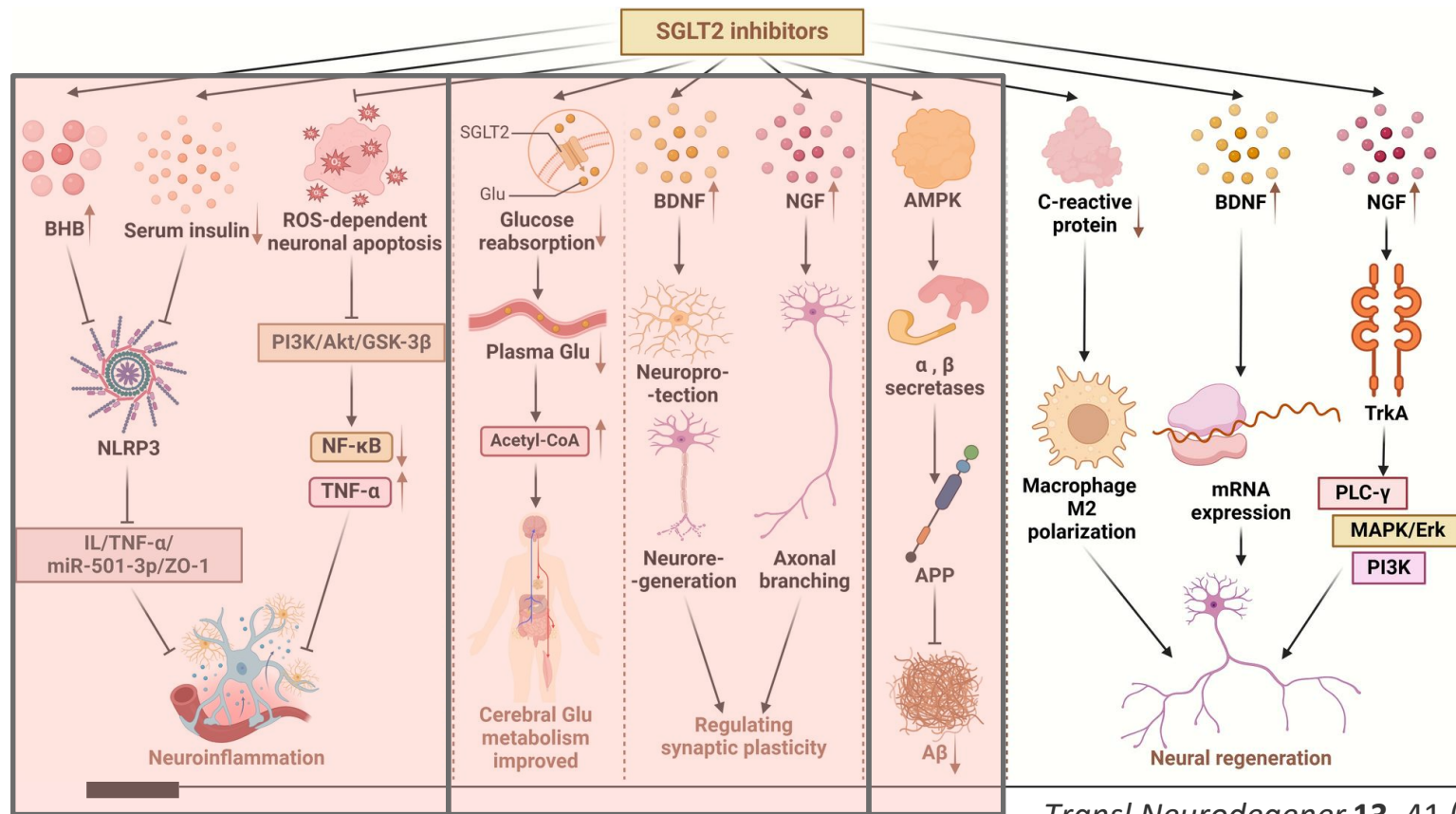
Sensitivity analysis

Outcomes	Patients with outcome, No./total No. (%)		aHR (95%CI)	P value
	SGLT-2i group	GLP-1RAs group		
Positive outcomes control				
Nausea/Vomitting/ Diarrhea	1328/4478 (29.66%)	1502/4478 (33.54%)	0.92 (0.86,0.995)	0.037
Negative outcomes control				
Skin cancer	51/3919 (1.30%)	71/3892 (1.82%)	0.79(0.55,1.13)	0.188
Asthma	87/2753 (3.16%)	117/2688 (4.35%)	0.80(0.61,1.06)	0.187
Traffic accident	398/4934 (8.07%)	445/4934 (9.02%)	0.97(0.85,1.11)	0.692
Appendicitis	22/5325 (0.41%)	25/5325 (0.47%)	0.96(0.54,1.71)	0.897

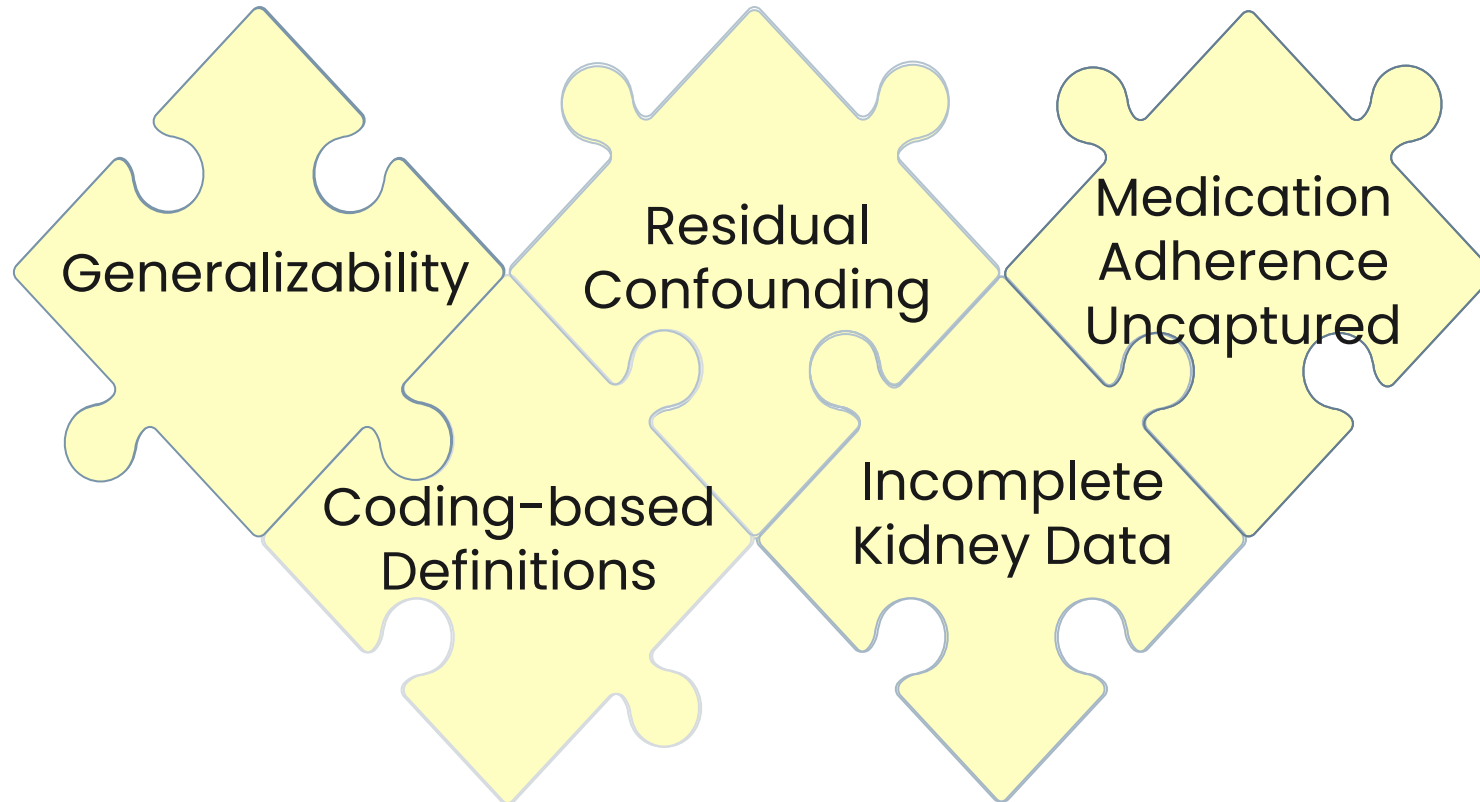
Safety analysis

Outcomes	Patients with outcome, No./total No. (%)		aHR (95%CI)	P value
	SGLT-2i group	GLP-1RAs group		
Safety Outcomes				
Volume depletion	691/4500 (5.36%)	745/4500 (16.56%)	0.99 (0.89,1.10)	0.810
Hypoglycemia	207/4708 (4.40%)	237/4708 (5.03%)	0.94 (0.78,1.14)	0.545
Genital mycotic infection	22/4022 (0.55%)	17/4022 (0.42%)	1.43 (0.76,2.69)	0.270
Nausea/Vomitting/ Diarrhea	1328/4478 (29.66%)	1502/4478 (33.54%)	0.92 (0.86,0.995)	0.037

Discussion








Limitations



Conclusions

- In patients with **T2DM recovering from dialysis-requiring AKI**, **SGLT2i** use (vs. GLP-1RA) was associated with:

 Risk of degenerative dementia		Dual neuroprotective and renoprotective benefits of SGLT2i
 Renal recovery and protection		
No  in serious adverse events		SGLT2i may be a preferred option during the AKD recovery period



**Thanks
for your
attention**