SGLT2is for patients with AF and T2DM : a multicenter, real-world cohort study

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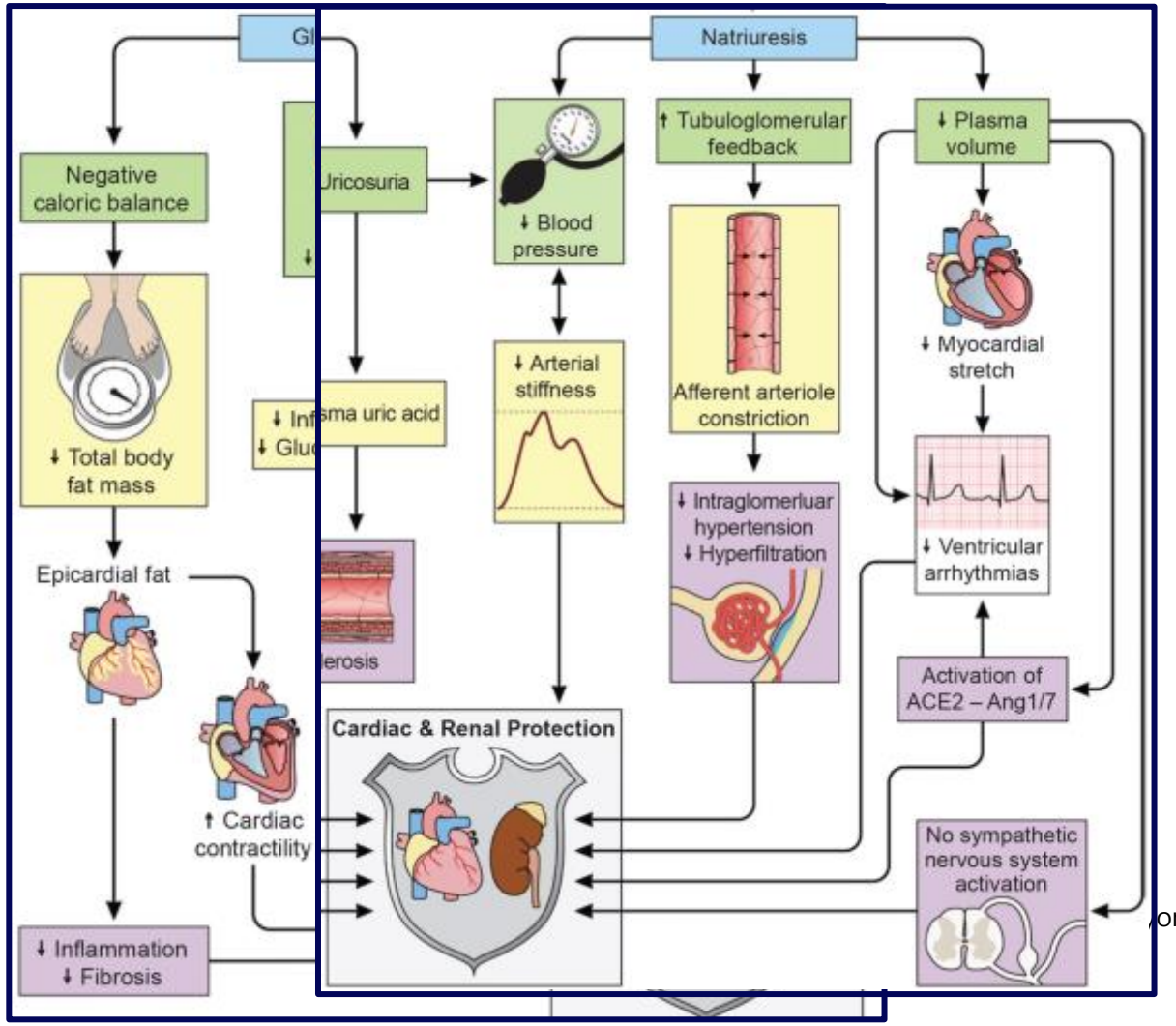
Disclosure

Relationships with commercial interests:

- Grants/Research Support: none
- Consulting Fees: none
- Other: none

Introduction

- Sodium-glucose cotransporter 2 inhibitors (SGLT2i)



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KHRS 2023

Introduction

- Sodium-glucose cotransporter 2 inhibitors (SGLT2i)

  - Prevention of cardiovascular events and HF inpatients with T2DM
    EMPA-REG OUTCOME trial, DAPA-HF trial, DECLARE-TIMI 58 trial
    CANVAS trial…

- Atrial arrhythmia with SGLT2i

  - Atrial fibrillation : Increased risk of stroke, HF and cerebrovascular death
  - Coexistence of AF with T2DM
  - Meta-analysis of 16 RCT : 24% reduction in the incidence of AF/AFL

Introduction

However, there is a lack of data regarding the benefits of SGLT2i in patients with T2DM and AF….

We aimed to assess the effects of SGLT2is on survival and HF events in patients with T2DM and AF

Methods

- **Multicenter retrospective study**

  - Seven medical centers affiliated with the Catholic University of Korea based on a clinical data warehouse (CDW) platform

- **Patients**

  - Diagnosis of T2DM with AF (September 2014 – August 2021)
  - Age > 18 years
  - Exclusion : ESRD

Methods

- **Study design**
  - SGLT2i group vs no SGLT2i group

1:2 propensity score matching analysis

- **Outcomes**
  - Primary endpoint
    : Composite of all-cause death or hospitalization due to HF events in 3 years

  - Secondary endpoint
    : Each component of the primary endpoint

Results

Baseline characteristics

	SGLT2i (N=1,118)	No SGLT2i (N=2,116)	P-value
Age (years)	71.2 ± 10.6	71.7 ± 11.3	0.195
Male, n (%)	695 (62.2%)	1284 (60.7%)	0.443
Prior AFCA, n (%)	63 (5.6%)	108 (5.1%)	0.576
Comorbidities, n (%)			
Hypertension	544 (48.7%)	1009 (47.7%)	0.642
Congestive heart failure	442 (39.5%)	808 (38.2%)	0.496
Chronic kidney disease	85 (7.6%)	159 (7.5%)	1.000
Prior MI	82 (7.3%)	129 (6.1%)	0.233
PAOD	62 (5.5%)	121 (5.7%)	0.907
Prior ischemic stroke	115 (10.3%)	218 (10.3%)	1.000
Prior ICH	17 (1.5%)	29 (1.4%)	0.850
Prior PCI	93b (8.3%)	148 (7.0%)	0.193

Results

Baseline characteristics

	SGLT2i (N=1,118)	No SGLT2i (N=2,116)	P-value
Lab findings			
Baseline HbA1c (%)	7.4 ± 1.5	7.4 ± 1.9	0.317
Average HbA1c during follow-up (%)	7.3 ± 1.1	6.9 ± 1.2	<0.001
Creatinine (mg/dL)	1.0 ± 0.4	1.0 ± 0.6	0.246
Baseline pro-BNP (pg/mL)	1228(437 – 3190)	1130(359 – 3051)	0.459
Average pro-BNP during follow-up (pg/mL)	754 (296 – 1936)	953 (345 – 2644)	0.004

	SGLT2i (N=1,118)	No SGLT2i (N=2,116)	P-value
Medications			
DOAC	692 (61.9%)	1276 (60.3%)	0.381
Warfarin	180 (16.1%)	340 (16.1%)	0.998
Antiplatelet	517 (46.2%)	946 (44.7%)	0.441
Beta blocker	690 (61.7%)	1296 (61.2%)	0.800
ACEi/ARB	734 (65.7%)	1340 (63.3%)	0.209
ARNI	61 (5.5%)	92 (4.3%)	0.183
DPP4i	513 (45.9%)	1011 (47.8%)	0.334
Metformin	842 (75.3%)	1589 (75.1%)	0.936
Sulfonylurea	417 (37.3%)	744 (35.2%)	0.273
Thiazolidinediones	63 (5.6%)	120 (5.7%)	1.000
Statin	853 (76.3%)	1568 (74.1%)	0.190
Insulin	187 (16.7%)	347 (16.4%)	0.893

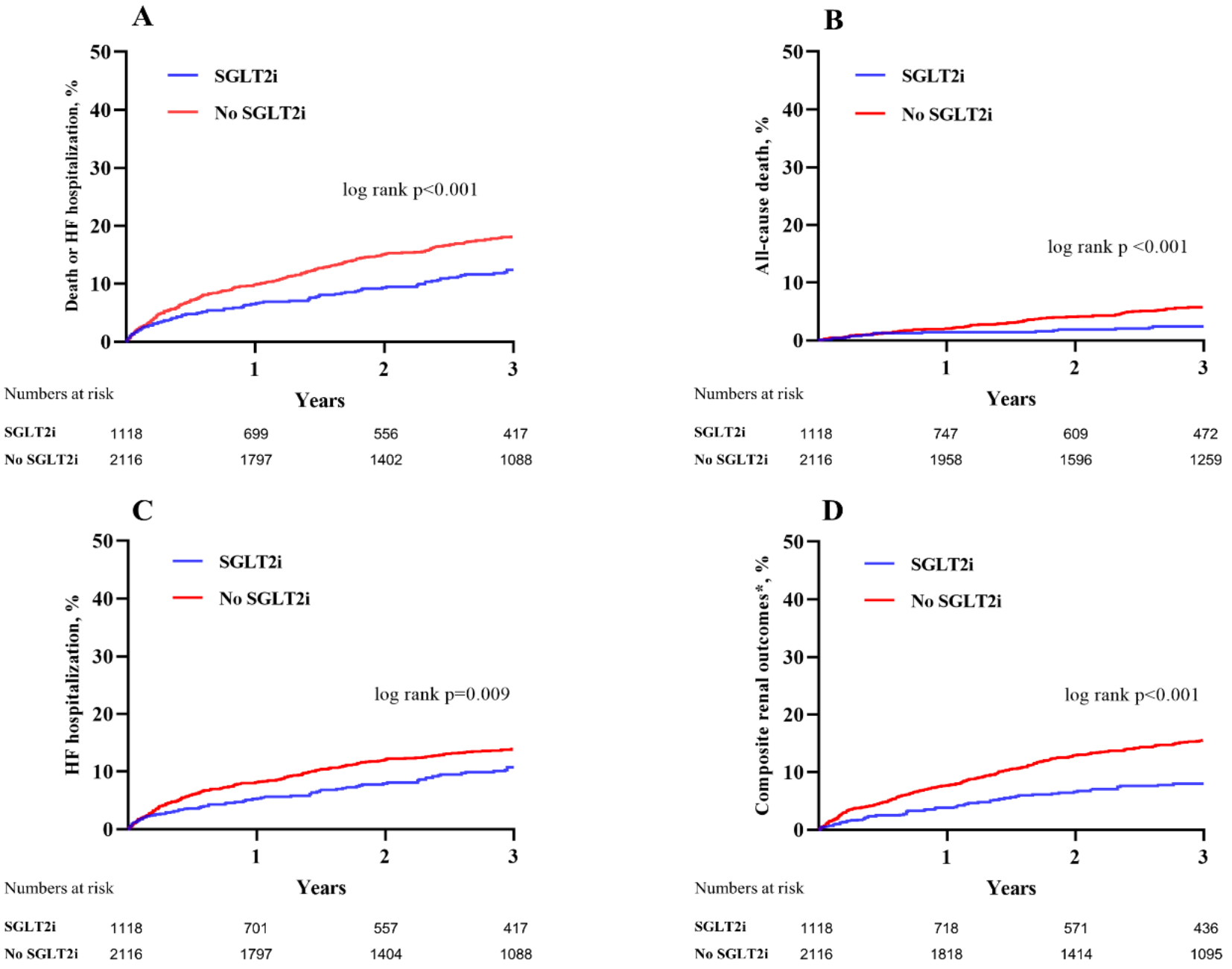
Results

Outcomes

Outcomes, n (%)	SGLT2i (n= 1,118)	No SGLT2i (n=2,116)	HR	95% CI	P
Primary endpoint	**96 (8.6%)**	**348 (16.4%)**	**0.656**	**0.523 – 0.823**	**<0.001**
All cause death	19 (1.7%)	107 (5.1%)	0.443	0.272 – 0.722	0.001
HF hospitalization	81 (7.2%)	266 (12.6%)	0.720	0.561 – 0.924	0.009
Secondary endpoints					
MI	59 (5.3%)	127 (6.0%)	1.068	0.783 – 1.457	0.676
Ischemic stroke	113 (10.1%)	326 (15.4%)	0.798	0.643 – 0.989	0.039
Renal function decline*	61 (5.5%)	285 (13.5%)	0.588	0.445 – 0.776	<0.001
New dialysis	3 (0.3%)	27 (1.3%)	0.335	0.101 – 1.112	0.074

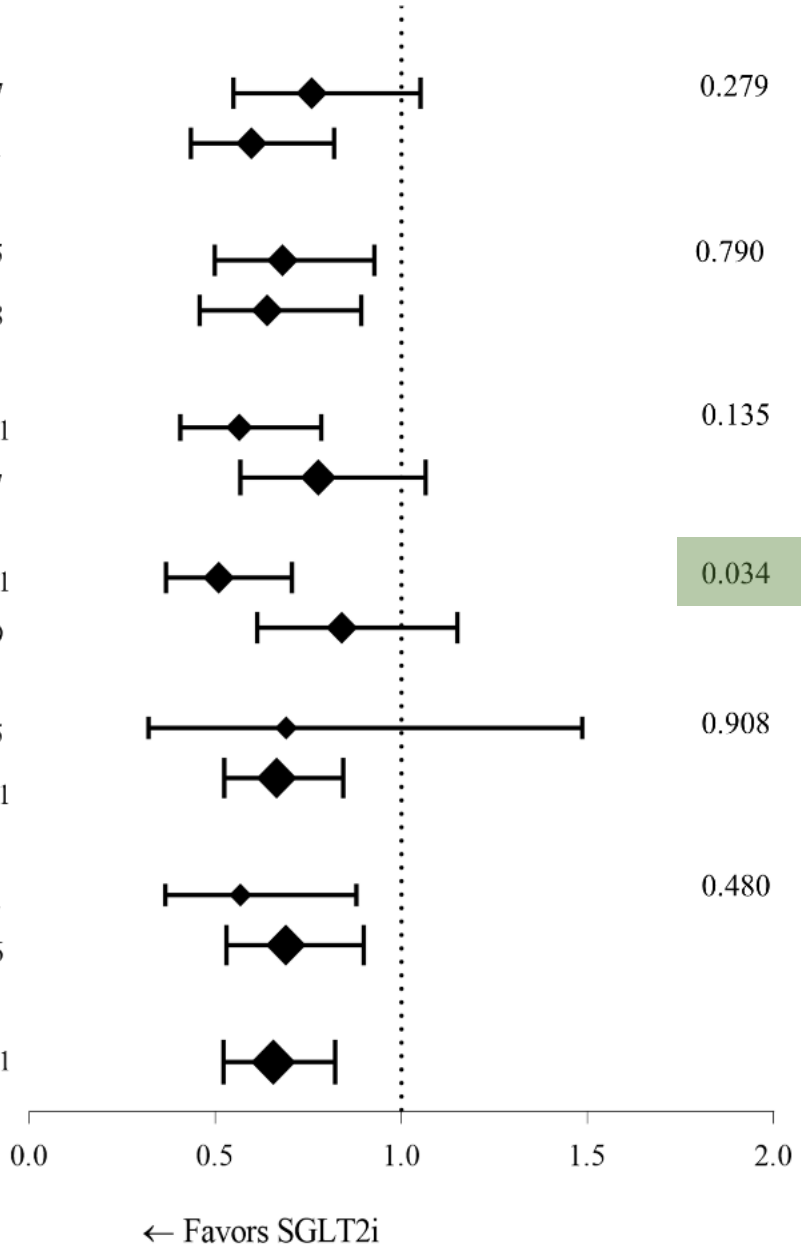
*>50% increase in serum creatinine compared to baseline level, during follow-up.

Results
Outcomes



Results
Outcomes

	SGLT2i	No SGLT2i	P-value	P for interaction
Age				
<75 yr	49/666 (7.4%)	143/1166 (12.3%)	0.097	0.279
≥75 yr	47/452 (10.4%)	205/950 (21.6%)	0.001	
Sex				
Male	52/695 (7.5%)	177/1284 (13.8%)	0.015	0.790
Female	44/423 (10.4%)	171/832 (20.6%)	0.008	
* **Prior HF**				
Yes	44/442 (10.0%)	192/808 (23.8%)	<0.001	0.135
No	52/676 (7.7%)	156/1308 (11.9%)	0.117	
Baseline HbA1c				
≥7	46/609 (7.6%)	175/952 (18.4%)	<0.001	0.034
<7	50/509 (9.8%)	173/1164 (14.9%)	0.279	
CKD				
Yes	8/85 (9.4%)	41/159 (25.8%)	0.345	0.908
No	88/1033 (8.5%)	307/1957 (15.7%)	<0.001	
Insulin therapy				
Yes	25/187 (13.4%)	102/347 (29.4%)	0.011	0.480
No	71/931 (7.6%)	246/1769 (13.9%)	0.006	
Total	96/1118 (8.6%)	348/2116 (16.4%)	<0.001	



Conclusion

- **The use of SGLT2is in patients with T2DM and AF was associated with**

  - lower risk of all cause mortality of hospitalization for HF events

  - reduced ischemic stroke risk and adverse renal events

Thank you for listening