Use of sodium-glucose transport protein 2 inhibitors and dipeptidyl peptidase 4 inhibitors in patients with MASLD in a real-world setting is associated with lower all-cause mortality

Sophia H. Hurr[1], Breda Munoz[2], Andrea R. Mospan[2], A. Sidney Barritt IV[3], on behalf of the TARGET-NASH Investigators

[1]UNC School of Medicine, Chapel Hill, NC, USA; [2]Target RWE, Durham, NC, USA; [3]UNC Liver Center, University of North Carolina, Chapel Hill, NC, USA

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Background

- MASLD is driven by the metabolic syndrome including type 2 diabetes mellitus (T2DM).
- Patients with T2DM have a greater disease burden and worse overall outcomes.
- With the exception of a single FDA approved medication, MASLD treatment remains largely limited to risk factor control and weight loss.
- While there has been an increasing focus on using glucagon-like peptide 1 receptor agonists for the treatment of MASLD, other drugs developed for diabetes like sodium-glucose transport protein 2 inhibitors (SGLT2) and dipeptidyl peptidase 4 inhibitors (DPP4) have been less studied in liver disease.
- Preliminary research has shown that these drugs, especially SGLT2 inhibitors, can lower fatty liver index, improve liver enzymes, and reduce BMI and waist circumference.

Aim: To describe patient characteristics and long-term outcomes in real world patients with MASLD who use SGLT2 or DPP4 medications.

Methods

- Adults included in the study were enrolled from 2016-2023 in the ongoing longitudinal TARGET-NASH US cohort with >1 year of follow up without liver transplant or liver cancer.
- Minimum SGLT2 and DPP4 use was >1 year.
- Demographic and clinical features were described among users and non-users.
- The primary outcome examined was all-cause mortality.
- Baseline characteristics are reported as well as Cox proportional hazard ratios.

Results

Figure 1. Multivariable analysis for mortality-associated factors in SGLT2 users

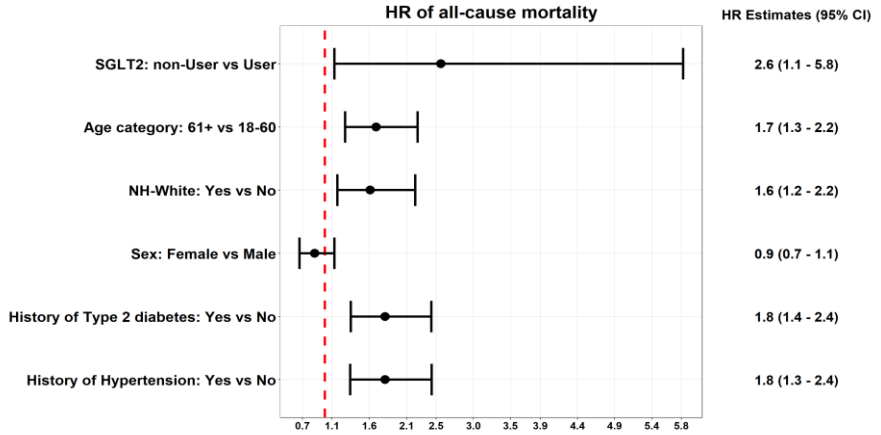

Figure 2. Multivariable analysis for mortality-associated factors in DPP4 users

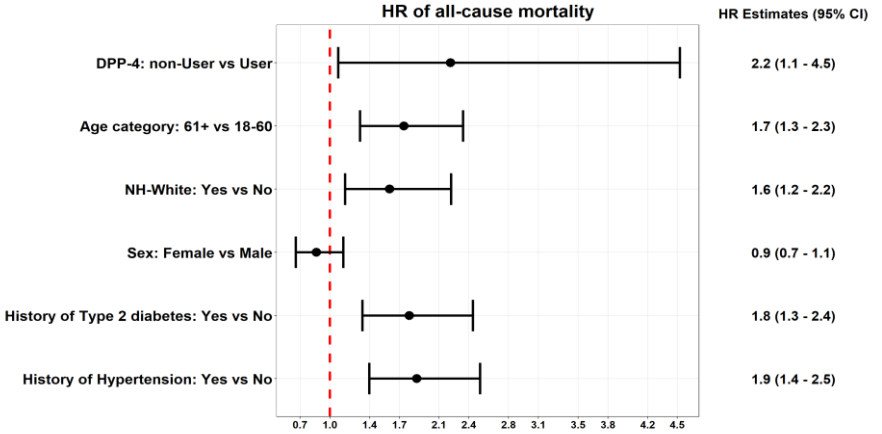

Table 1. Patient demographics among adults enrolled in TARGET-NASH

		SGLT2	No SGLT2 use	DPP4	No DPP4 use
	n	105	3607	104	3608
Age					
	<64	72 (68.6%)	2444 (67.7%)	50 (48.1%)	2466 (68.4%)
	≥65	33 (31.4%)	1163 (32.3%)	54 (51.9%)	1142 (31.7%)
Gender					
	Female	56 (53.3%)	2100 (58.2%)	60 (57.7%)	2096 (58.1%)
	Male	49 (46.7)	1507 (41.8%)	44 (42.3%)	1512 (41.9%)
Race					
	Asian	4 (3.8%)	333 (9.2%)	8 (7.7%)	329 (9.1%)
	Hispanic/Latino	9 (8.6%)	455 (12.6%)	10 (9.6%)	454 (12.6%)
	Non-Hispanic Black	3 (2.9%)	207 (5.7%)	1 (1.0%)	209 (5.8%)
	Non-Hispanic White	88 (83.8%)	2409 (66.8%)	83 (79.8%)	2414 (66.9%)
Insurance					
	Medicaid	7 (6.7%)	296 (8.2%)	5 (4.8%)	298 (8.3%)
	Medicare	33 (31.4%)	1020 (28.3%)	47 (45.2%)	1006 (27.9%)
	Private	62 (59.0%)	2128 (59.0%)	48 (46.2%)	2142 (59.4%)
	Uninsured	1 (1.0%)	36 (1.0%)	1 (1.0%)	36 (1.0%)
Site type					
	Academic	82 (78.1%)	2106 (58.4%)	73 (70.2%)	2115 (58.6%)
	Community	23 (21.9%)	1501 (41.6%)	31 (29.8%)	1493 (41.4%)
Specialty					
	Endocrinology	17 (16.2%)	85 (2.4%)	9 (8.7%)	93 (2.6%)
	GI/Hepatology	88 (83.8%)	3522 (97.6%)	95 (91.3%)	3515 (97.4%)
MASLD diagnosis					
	MASL	24 (23.0%)	1175 (32.6%)	15 (14.0%)	1184 (32.8%)
	MASH	12 (11.0%)	1199 (33.2%)	15 (14.0%)	1232 (34.2%)
	Cirrhosis	69 (66.0%)	1235 (34.2%)	74 (72.0%)	1192 (33.0%)

Conclusions

- SGLT2 and DPP4 inhibitor users had better overall mortality compared to non-users.
- SGLT2 and DPP4 inhibitor users were more likely to be enrolled from academic and endocrinology practices in this real-world setting.
- Further research into effectiveness of these medications in patients with MASLD and potential broader application by gastroenterologists/hepatologists is warranted.

Acknowledgements and Disclosures: Target RWE communities are collaborations among academic & community investigators, the pharmaceutical industry and patient community advocates. Target RWE communities are sponsored by TARGET PharmaSolutions Inc (d.b.a., Target RWE). The authors would like to thank all the investigators, participants, and research staff associated with TARGET-NASH. ClinicalTrials.gov Identifier: NCT02815891. This work was supported by grant number T35-DK007386 from the National Institutes of Health.
Contact Information: Sophia Hurr, sophia_hurr@med.unc.edu