

Disparities in glucose-lowering drug therapy in migrants and native Danes with type 2 diabetes

Background

Migrants are at increased risk of type 2 diabetes (T2D) compared to native populations in European countries, and migrants with T2D have worse risk profiles for complications and mortality. Novel glucose-lowering drugs (GLDs), sodium glucose co-transporter type 2 inhibitors (SGLT2i) and glucagon-like peptide-1 receptor agonists (GLP1RA) substantially reduce the risk of adverse cardiovascular events and renal disease beyond their glucose-lowering effect, and current consensus recommends considering these drugs in T2D patients with CVD, multiple risk factors for CVD, or chronic kidney disease. This study aimed to examine disparities in GLD therapy between migrants and native Danes, as this has not been described and could contribute excess complication risk in migrants.

Methods

In a nationwide, register-based cross-sectional study of 263,393 individuals with prevalent T2D on December 31 2018, we examined user-prevalence in 2019 and 2021 of i) GLD combination therapies, and ii) individual GLD types. Migrants were grouped by origin (Middle East, Europe, Turkey, Former Yugoslavia, Pakistan, Sri Lanka, Somalia, and Vietnam) and relative risk (RR) versus native Danes was computed using robust Poisson regression to adjust for clinical and socioeconomic characteristics.

Results

Among native Danes, the most widely-used oral GLD was metformin (used by 67.4%), followed by dipeptidyl peptidase 4 inhibitors (DPP4i) (15.6%), SGLT2i (14.1%), and sulfonylureas (6.4%), and prevalence was higher in most migrant groups (RR: use of any oral GLD: 0.99 [0.98-1.01] (Europe-group) to 1.10 [1.07-1.13] (Somalia-group)). Furthermore, 20.5% of native Danes used insulins, and 14.6% used GLP1RA, but use of these injection-based GLDs was less prevalent in migrants (RR: insulins: 0.66 [0.62-0.71] (Sri Lanka-group) to 0.94 [0.90-0.98] (Europe-group), GLP1RA: 0.31 [0.25-0.40] (Somalia-group) to 0.94 [0.89-1.00] (Europe-group)). These patterns were unchanged in 2021.

Conclusion

Disparities in GLD therapy were evident between migrants and native Danes, as migrants were more likely to use oral GLDs, but less likely to use injection-based GLDs. The much lower prevalence of GLP1RA use in migrants confers an excess risk of cardiovascular complications compared to native Danes.

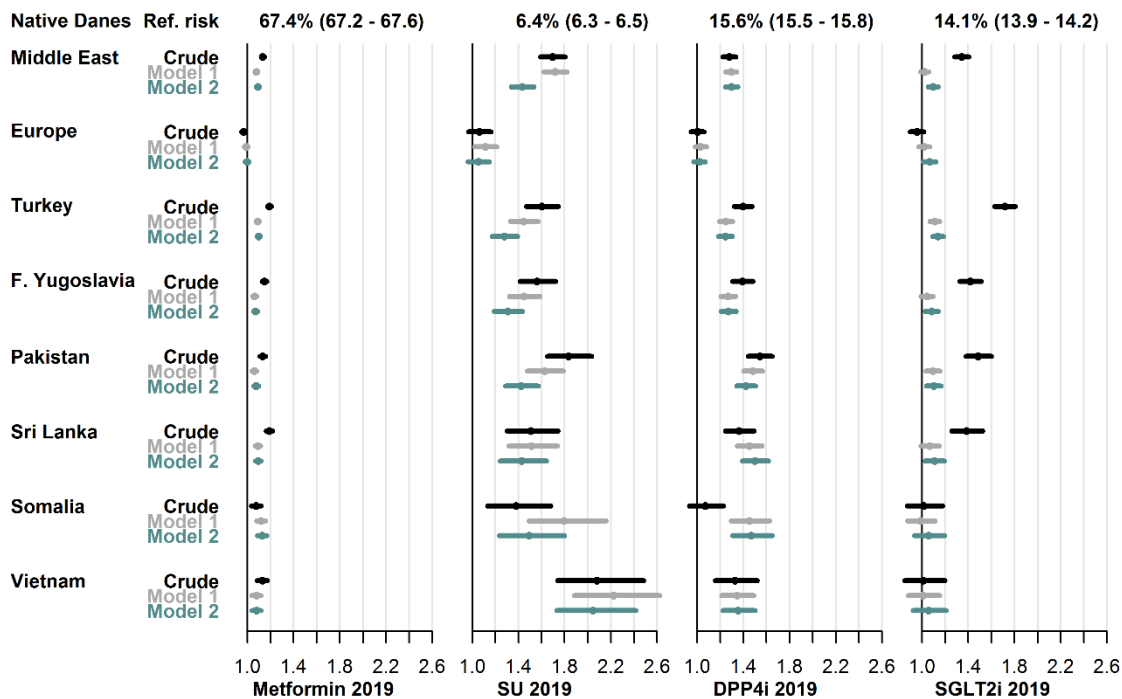


Figure 1: Relative risk of using oral glucose-lowering drugs (GLD) during 2019 with 95% CIs. Model 1 adjusted for clinical variables (age, sex, diabetes duration, complication status, HbA1c level, LDL-cholesterol level, lipid-lowering drug use, number of GLD used). Model 2 adjusted for clinical variables and socioeconomic variables (household income, employment status, duration of residence, region of residence). F. Yugoslavia, Former Yugoslavia; SU, sulfonylureas; DPP4i, dipeptidyl peptidase 4 inhibitors; SGLT2i, sodium glucose co-transporter type 2 inhibitors.

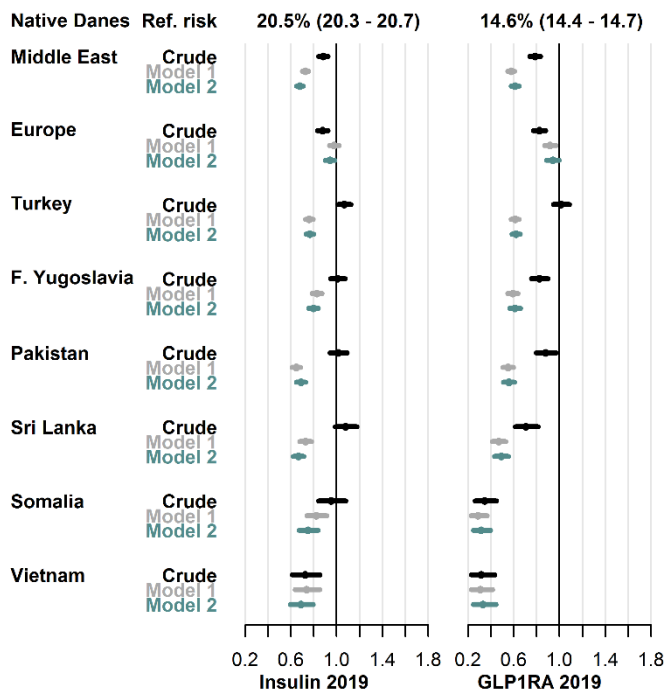


Figure 2: Relative risk of using injection-based glucose-lowering drugs (GLDs) during 2019 with 95% CIs. Model 1 adjusted for clinical variables (age, sex, diabetes duration, complication status, HbA1c level, LDL-cholesterol level, lipid-lowering drug use, number of GLD used). Model 2 adjusted for clinical variables and socioeconomic variables (household income, employment status, duration of residence, region of residence). F. Yugoslavia, Former Yugoslavia; GLP1RA, glucagon-like peptide-1 receptor agonists.