CO36 Prescribing Trends of Cardioprotective Medications Among Patients with Diabetes and ASCVD in Primary Care Setting in Qatar

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Background

- Qatar has a diabetes prevalence of 18.7%, which translates to around 409,300 confirmed cases
- Qatar faces projected increases in diabetes-related health expenditure, which is expected to rise up to 32% of total health expenditure by 2050
- The American Diabetes Association (ADA) strongly recommends using cardioprotective agents for individuals with type 2 diabetes who also have established atherosclerotic cardiovascular disease (ASCVD)
- Globally, despite the proven cardiovascular benefits of cardioprotective medications, their utilization remains suboptimal in real-world settings, with studies reporting that only 4.1% to 19% of eligible patients receiving recommended cardiovascular protective treatments

Objectives

This study aimed to assess the prescribing trends of guidelines-recommended cardioprotective medications, including sodium-glucose cotransporter-2 inhibitors (SGLT2i), glucagon-like peptide-1 receptor agonists (GLP-1RA), angiotensin-converting enzyme inhibitors/angiotensin receptor blockers (ACEi/ARB), and high-intensity statins, among patients with type 2 diabetes mellitus (T2DM) and atherosclerotic cardiovascular disease (ASCVD) in Qatar's primary health care corporation (PHCC)

Methods

Methods considered

Domain	Details
Setting & Context	Primary Health Care Corporation (PHCC), Qatar-29 centers across 3 regions
Study Design	Retrospective observational study
Study Period	January 1, 2021 – December 31, 2021
Data Source	Electronic medical records from all PHCC centers (n=29)
Population	Adults with T2DM and established ASCVD
Medications Assessed	High-intensity statins, ACEi/ARB, SGLT2i or GLP-1RA recorded as active prescriptions in EHR at time of extraction (not pharmacy fill data)
Outcome Measure	ADA-based prescribing adherence score (0–3 points): 1 point each for high-intensity statin + ACEi/ARB + SGLT2i or GLP-1RA
Data Collection Method	Medications, demographics, labs, medical history retrieved from EHR. Prescription status based on current active orders (new or chronic). Two-reviewer verification for scoring; discrepancies resolved by review
Statistical Analysis	SPSS v27. Descriptive stats. Chi-square for categorical comparisons; t-test for continuous. Binary logistic regression (ORs, 95% CI). Significance level $p < 0.05$
Ethics approval	PHCC Research Committee approval (PHCC/DCR/2022/04/020). Waiver of consent due to retrospective design. Fully de-identified dataset

Results

Key results

Domain	Findings
Sample Size	2,870 adults with T2DM + ASCVD seen at PHCC
Demographics	Mean age ≈ 50 years; 66% male
Nationality	91.3% non-Qatari (52.6% South Asian)
Body mass index	Mean 30.7 kg/m² (obesity range)
Comorbidities	Hypertension: 94.4%; Dyslipidemia: 37.4%
Glycemic Control	Mean HbA1c: 7.6% (Slightly lower on high-intensity statin group: 7.4%)
Guideline-Recommended Medications	High-intensity statin: 10% Moderate-intensity statin: 29.2% Low-intensity statin: 0.3% ACEi/ARB: 56% SGLT2i/GLP-1RA: 12%
Sex Differences	Males more likely to receive: • High-intensity statin: 11.4% vs 7.7% ($p<0.001$) • SGLT2i/GLP-1RA: 13.3% vs 10.8% ($p=0.038$)
Nationality Difference	Qataris more likely to receive SGLT2i/GLP-1RA: 18.8% vs 11.8% ($p=0.001$) Non-Qataris more likely to receive ACEi/ARB: 57.9% vs 50.8% ($p=0.032$)
Clinical Associations	Higher ACEi/ARB prescribing among those with hypertension & dyslipidemia ($p<0.001$)
EBM Prescribing Score (0–3)	More likely to be 2–3 among males, those with hypertension, dyslipidemia, retinopathy, or higher HbA1c
Logistic Regression (Predictors of Score 2–3)	Model significant ($\chi^2(19)=60.23$, $p<0.001$), $R^2=0.163$ Higher odds with: • Male (OR 1.64, 95% CI 1.37–1.79) • Higher HbA1c (OR 1.38 per 1% ↑, 95% CI 1.11–1.72) • Dyslipidemia (OR 1.56, 95% CI 1.29–1.73)

- **Key insights:**
  - Only 10% on high-intensity statins and 12% on SGLT2i/GLP-1RA
  - Male sex, higher HbA1c, and dyslipidemia predicted higher use of evidence-based medications
  - Qataris were more likely to receive SGLT2i/GLP-1RA, while non-Qataris more often received ACEi/ARBs

Conclusion

- Guideline-recommended cardioprotective therapies are under-prescribed in Qatar
- Few patients received full evidence-based treatment
- Improving prescribing practices could reduce cardiovascular risk
- Further research is needed to understand and address barriers

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