



Achievement of Guideline-Concordant Care in Patients with Acute Coronary Syndromes in Saudi Arabia: A Cross-Sectional Study



Deanship of Scientific Research

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Introduction

- Guideline-directed medical therapy (GDMT) is recommended by evidence-based guidelines for all patients with coronary artery disease (CAD).
- The adherence to GDMT after an acute coronary syndrome (ACS) is associated with a significant reduction in mortality rates. ⁽¹⁾⁽²⁾
- However, current evidence suggests that compliance with GDMT remains poor, especially after an acute coronary event.
- In Saudi Arabia there is an increasing burden of traditional atherosclerotic cardiovascular (CV) risk factors and CV diseases.⁽³⁾
- A recent study have reported suboptimal adherence to GDMT post coronary artery bypass grafting (CABG) in Saudi Arabia ⁽⁴⁾
- However, this study included only subjects admitted for a CABG.
- Determining the current status of the use of GDMT in subjects with ACS may help guide clinicians and policy makers towards better management of subjects with ACS.

Objective

- Determine guideline concordant care to GDMT in subjects with ACS at hospital discharge.
- Measure the association between demographic and clinical characteristics and the use of GDMT in subjects with ACS.

Methodology

Study design and setting:

- Retrospective chart review
- Conducted at King Saud University Medical City in Riyadh
- From the period of 2015-2018.

Study population:

- Adults, age 18 years and older.
- Admitted to the study center with an ACS, either unstable angina, non ST-elevation myocardial infarction (NSTEMI), or ST-elevation myocardial infarction (STEMI).

Data collection:

- ACS diagnosis
- Demographic characteristics (e.g., age, gender)
- Clinical data (e.g. comorbidities, and kidney function tests.)
- Discharge medications prescribed after ACS

Methodology

Study outcome:

- Guideline-concordant care was defined as 100% compliance with all ACS treatment based on the 2014 American heart association (AHA) Guideline, which include:⁽⁵⁾⁽⁶⁾
- Aspirin** for all patients unless intolerant or contraindicated.
 - Angiotensin converting enzyme inhibitors (ACE-I) or angiotensin receptor blockers (ARBs)** for patients with left ventricular systolic dysfunction, diabetes mellitus (DM), and/or chronic kidney disease unless the patients have hypotension, hyperkalemia, and worsening renal function.
 - Beta-blockers** unless contraindicated or intolerant.
 - High-intensity statins** unless contraindicated or intolerant. ⁽⁵⁾⁽⁶⁾

Statistical analysis:

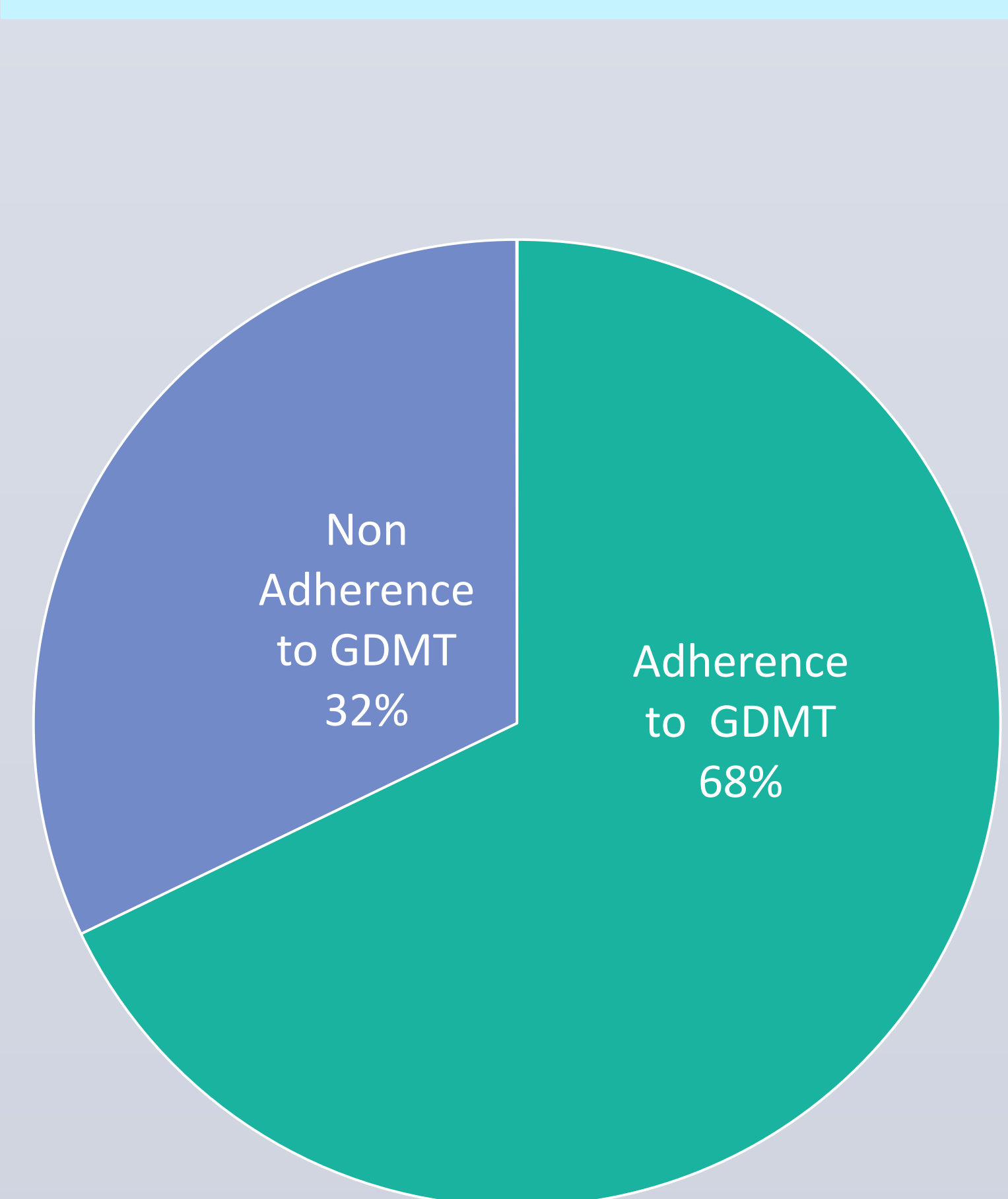
- Percentages and frequencies used for the categorical variables, while the means and standard deviations calculated for the continuous variables.
- Univariate and multivariate logistic regression models to estimate odds ratios (OR) for the association between clinical characteristics and the composite outcome of guideline-concordant care.

Ethical approval for the study was obtained.

Results

- A total of **460 patients** met our inclusion criteria.

Figure 1: Guideline Concordant Care



GDMT: Guideline-directed medical therapy

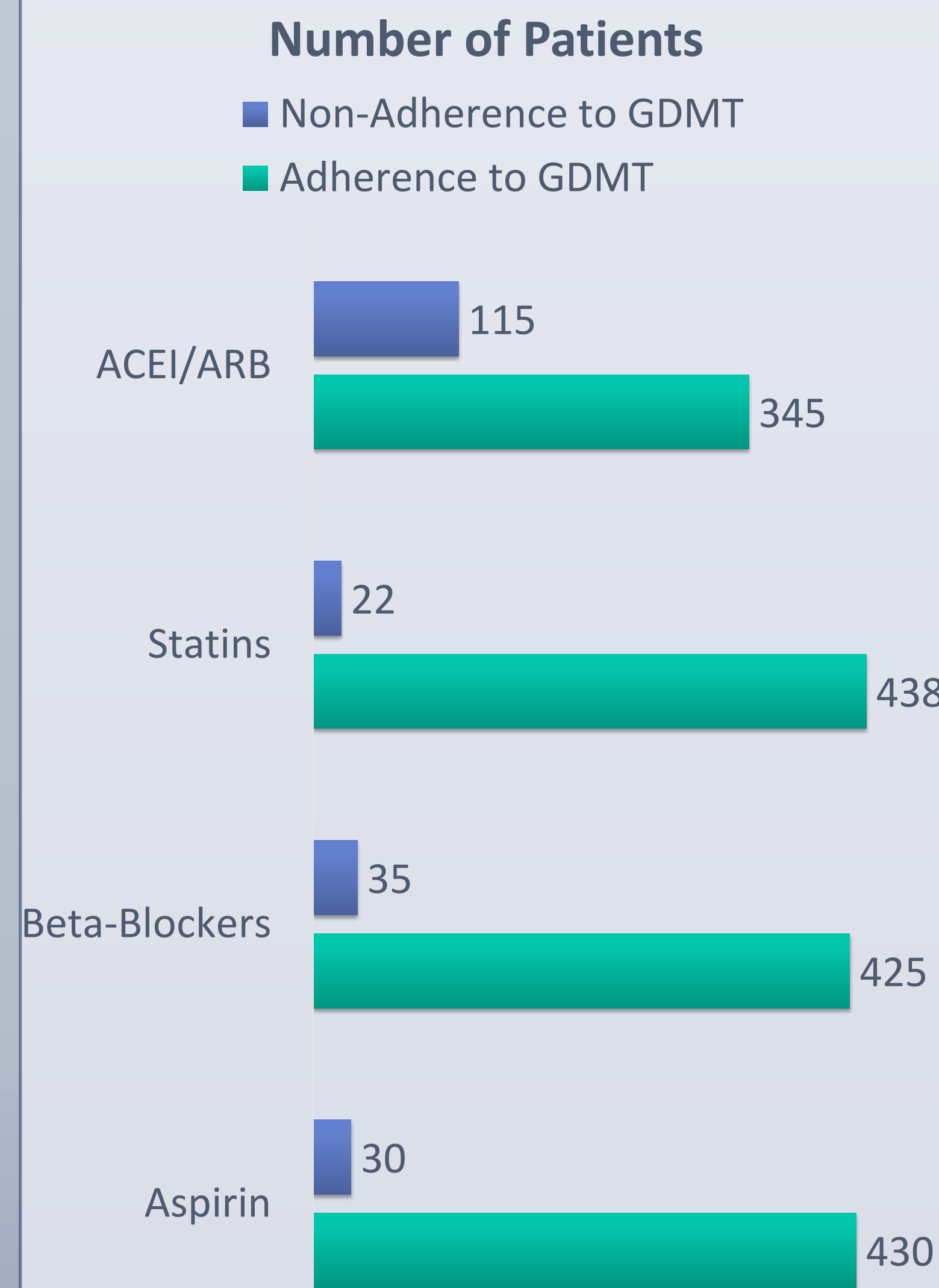
Results

Table 1: Selected Demographic and Clinical Characteristics

Variable	Adherence to GDMT (n=312)	Non-Adherence to GDMT (n=148)
Age in years, mean±SD	62 (11.5)	61 (13)
Male gender	244 (78%)	105 (71%)
History of Hypertension	212 (68%)	78 (53%)
History of DM	192 (62%)	83 (56%)
CABG at current admission	80 (26%)	30 (20%)

Data presented as number and (percentage)
CABG: Coronary artery bypass grafting; DM: diabetes; GDMT: Guideline-directed medical therapy; N: Number; SD: Standard deviation

Figure 2: Adherence to GDMT for Each Medication



ACEI: Angiotensin converting enzyme inhibitors; ARB: Angiotensin receptor blockers; GDMT: Guideline-directed medical therapy

Table 2: Multivariate Regression Model for Adherence to GDMT

Variable	OR	95% CI
Age	1.01	0.98-1.02
Gender*	0.62	0.39-0.98
History of Hypertension**	1.99	1.29-3.10
History of DM	1.03	0.67-1.60
CABG	1.24	0.76-2.04

CABG: Coronary artery bypass grafting; CI: Confidence interval; DM: diabetes; GDMT: Guideline-directed medical therapy; OR: Odds ratio
* p-value<0.05
** p-value<0.005

Conclusions

- In this single centre study, adherence to GDMT remains suboptimal.
- Around one third of subjects with ACS did not receive GDMT.
- The majority of guideline non-adherence was due to limited use of ACEI/ARBs in subjects who were eligible to receive them.
- Only gender and history of hypertension were significantly associated with adherence to GDMT.
- Further analysis is required to investigate the low adherence rate to prescribing ACEI/ARBs for subjects who are eligible to these medications.
- There is a pressing need exists to develop effective strategies to improve compliance with lifesaving drugs for secondary prevention in subjects with ACS.

Acknowledgment

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