SUDAN HEART JOURNAL | Official Journal of the Sudan Heart Society | ISSN 1858-6783 (Print) / 1858-6791 (Online)
Vol. 9, No. 3 (Dec 2021) — Current Issue • Manuscript: SHJ-2021-V9N3-02 • DOI: 10.25239/SHJ/Vol9/No3/Original2

Original Article

Dual Antiplatelet Therapy Duration Post PCI in ACS in Patients Attending Sudan Heart Center and Shab Teaching Hospital

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Abstract

Prospective/retrospective audit of 73 post-PCI acute coronary syndrome patients (mean age 61.4 years, 66% STEMI, 60.2% diabetic) across Sudan Heart Center and Shab Teaching Hospital. Aspirin plus clopidogrel was prescribed in 97.3% and ticagrelor in 2.7%. Mean DAPT duration was 9.2 months, 21.9% extended DAPT beyond 12 months, and 35.1% were unaware of an intended stop date.

Introduction

Acute coronary syndrome is a major cause of mortality worldwide (1). Antiplatelet therapy especially dual antiplatelet therapy (DAPT) is one of the main therapies that has been shown to improve outcomes in patients treated with percutaneous coronary intervention with benefits in reducing cardiovascular events outweighing potential bleeding risks (2).

Objectives

To study different types of DAPT used in patients post PCI, duration and whether patients had scheduled review dates and pre-specified stop dates.

Methodology

Study design: Longitudinal retrospective and prospective study hospital-based study.

Study area : Sudan Heart center and Shab Teaching hospital, Khartoum, Sudan.

Study dates and duration: July-September 2021

Inclusion criteria: All patients admitted with ACS and receiving DES during index admission.

Exclusion criteria: Medically treated patients and those not consented to the study.

Data collection and analysis: Data were collected on demographics, risk factors for atherosclerotic disease, DAPT regimen used and duration, and prespecified dates for DAPT use. Data were entered and analyzed using SPSS (v.24)

Ethical approval was obtained from Sudan Medical Specialization Board and Ethics committee from Shab Teaching Hospital and Sudan Heart Center.

Results

A total of 73 patients were studied with mean age of 61.4 years (+/- 9.8) and a range of 42-82 years with 44 males and 29 females. Figure (1) shows the age distribution of the study population.

Fig 1. Age distribution of study population. Y axis= age in years. N=73

The types of ACS were STEMI(ST segment elevation myocardial infarction) in 66 % of patients, NSTEMI (Non ST segment myocardial infarction) in 23% of patients and UA (Unstable angina) in 11% of patients. Figure (2) shows distribution of different types of ACS in study population

Figure 2. Distribution of ACS types in study population. ACS= acute coronary syndrome; STEMI= ST elevation myocardial infarction; NSTEMI= Non ST-elevation myocardial infarction; UA=Unstable angina. N=73

The distribution of atherosclerotic risk factors, namely DM , HTN , smoking and dyslipidemia in the study cohort is shown in Fig 3.

Fig 3. Distribution of atherosclerotic risk factors in study population. DM=Diabetes mellitus; HTN=Hypertension. N=73.

The duration of DAPT at the time of study is shown in figure 4. The mean duration was 9.2 months.

Fig 4. Duration of DAPT in study population. DAPT= Dual antiplatelet therapy=73

Aspirin was used in all patients. Clopidogrel was used in 97.3% patients and ticagrelor in 2.7% of patients. Figure 5 summarizes the DAPT regimen

Fig 5. Antiplatelet agents used. ASA= Aspirin. N=73

Of the 73 patients involved, only 47 (64.9%) has knowledge that there is a stop date for DAPT. Of the 16 patients who continued DAPT for more than 12 months 6(37.5%) patients were instructed by their doctor.

Discussion

DAPT remains pivotal in patients receiving DES following acute coronary syndrome to prevent stent thrombosis and improve cardiovascular outcomes. Recent guidelines from the European Society of Cardiology and the American College of Cardiology advocate DAPT for one year in patients with ACS and receiving DES. Newer more potent agents namely prasugrel and ticagrelor were favored over clopidogrel (3,4). In our study clopidogrel was used in the vast majority of patients with ticagrelor in a very small minority and no patient was on prasugrel. This probably is related to the wider availability of clopidogrel and lower cost in Sudan.

A significant proportion of the study population, more than one third, were not aware of a stop date for the DAPT regimen. Inadequate patient education and counselling at discharge and during follow up remains a challenge.

Of note more than 20% of the study population continued their DAPT for more than a year and 35% did so without physician instructions. Though this strategy may be warranted in patients with high thrombotic risk and low bleeding risk, these numbers are disproportionately high. Physician education and presence of institutional policies are important to promote evidence based safe use of DAPT.

Conclusion

In our study population, clopidogrel plus aspirin combination constitutes the DAPT regimen in the vast majority of patients. Many patients are unaware of the exact duration of DAPT post PCI for ACS and many have extended use for more than year.

Abbreviations

ACS: acute coronary syndrome

DAPT: Dual antiplatelet therapy

DES: Drug-eluting stent

DM: Diabetes Mellitus

HTN: Hypertension

PCI: Percutaneous coronary intervention

NSTEMI: Non ST-elevation myocardial infarction

STEMI: ST-elevation myocardial infarction

UA: Unstable angina

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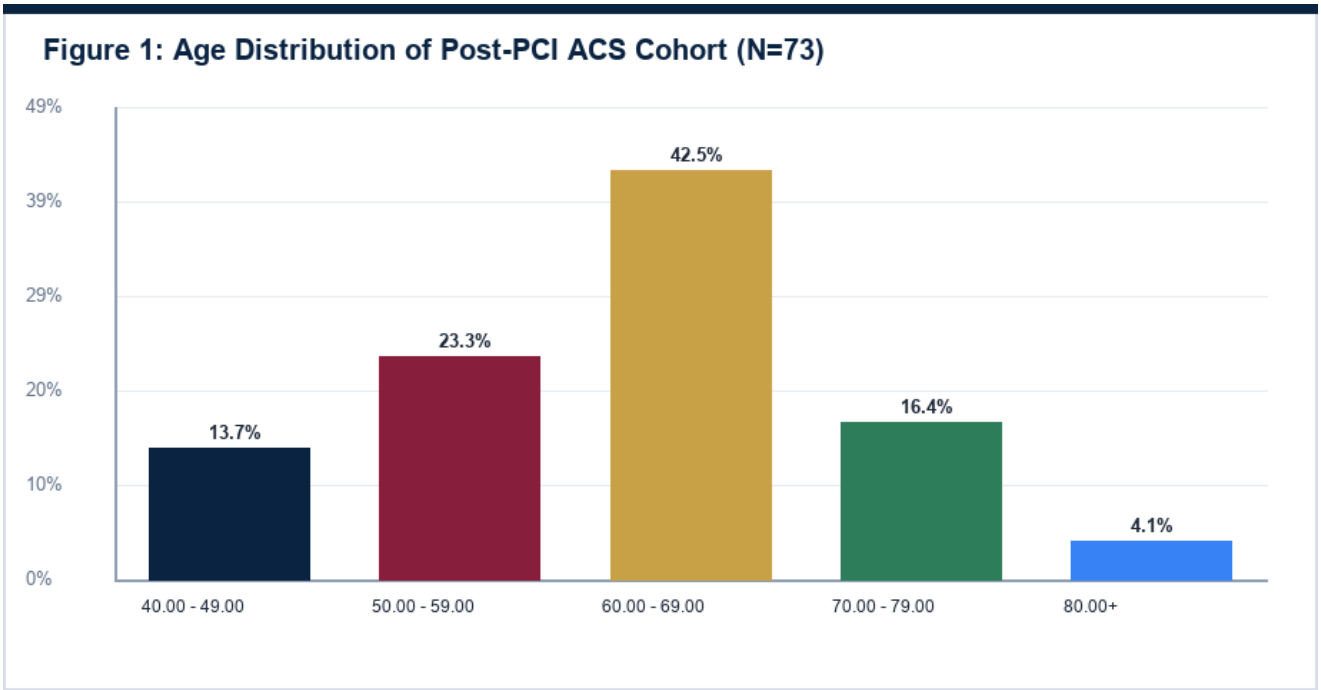


Figure 1: Age Distribution of Post-PCI ACS Cohort (N=73)

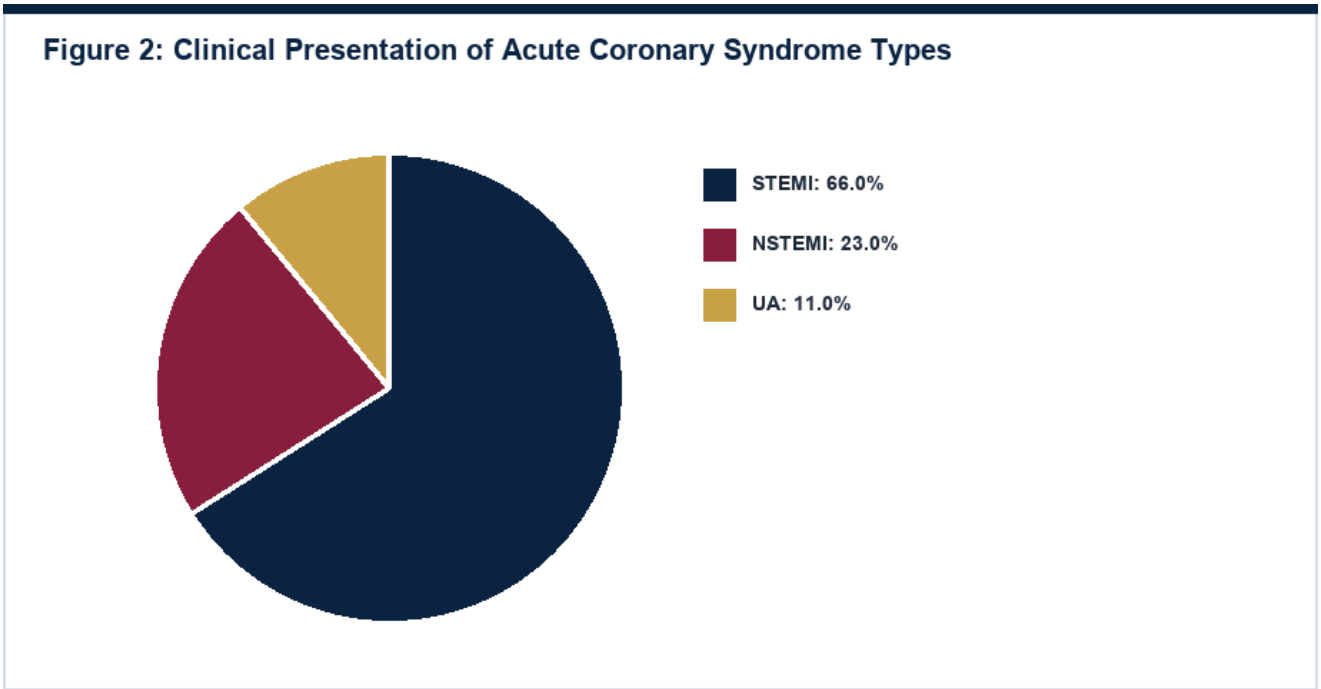


Figure 2: Clinical Presentation of Acute Coronary Syndrome Types

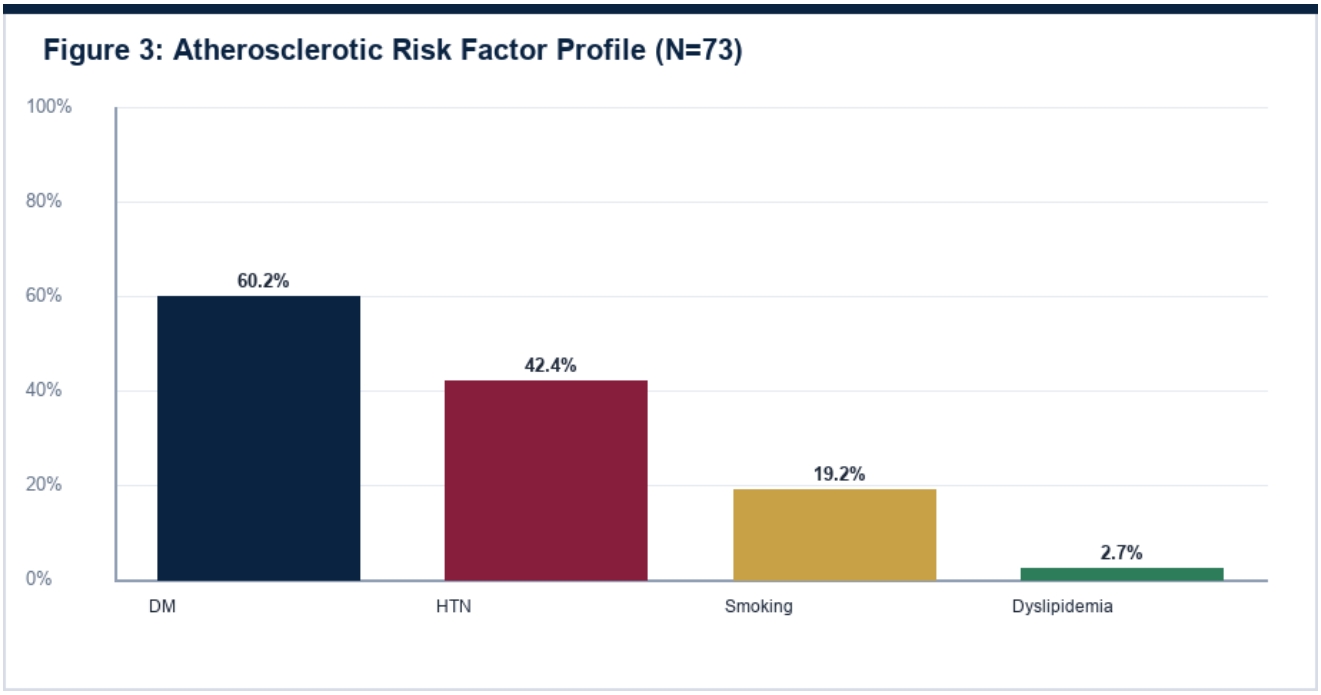


Figure 3: Atherosclerotic Risk Factor Profile (N=73)

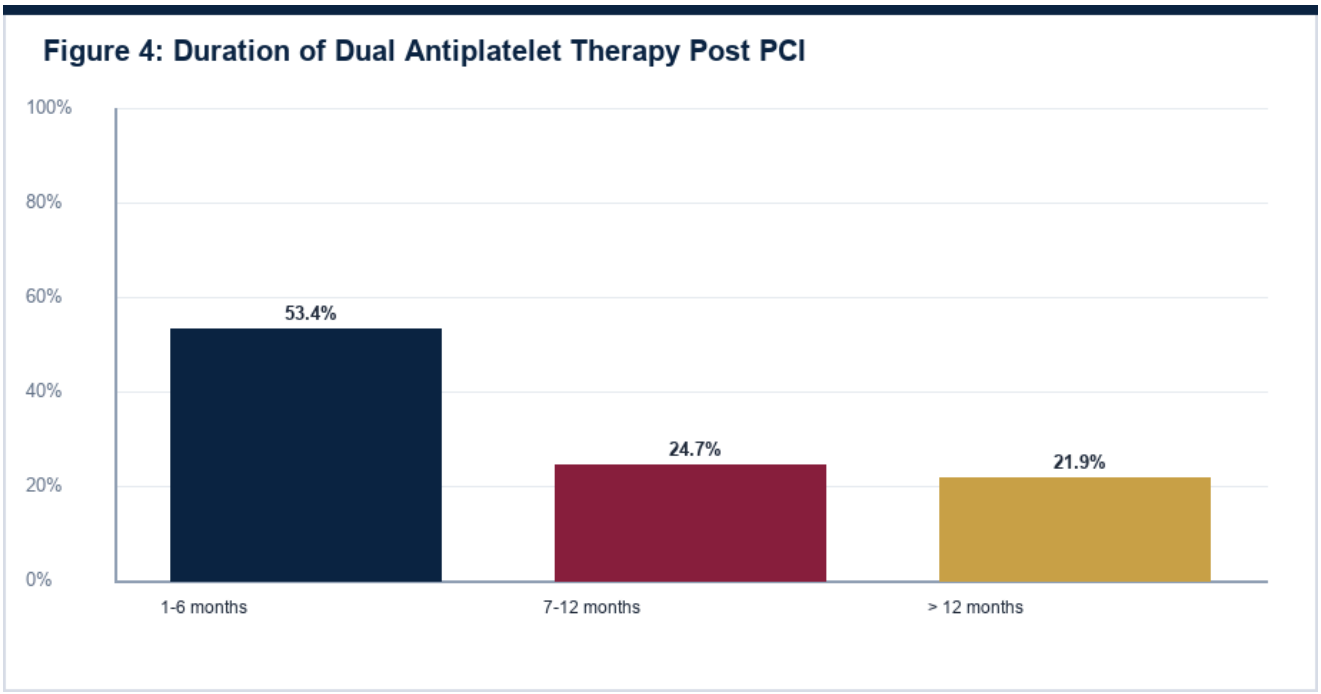


Figure 4: Duration of Dual Antiplatelet Therapy Post PCI

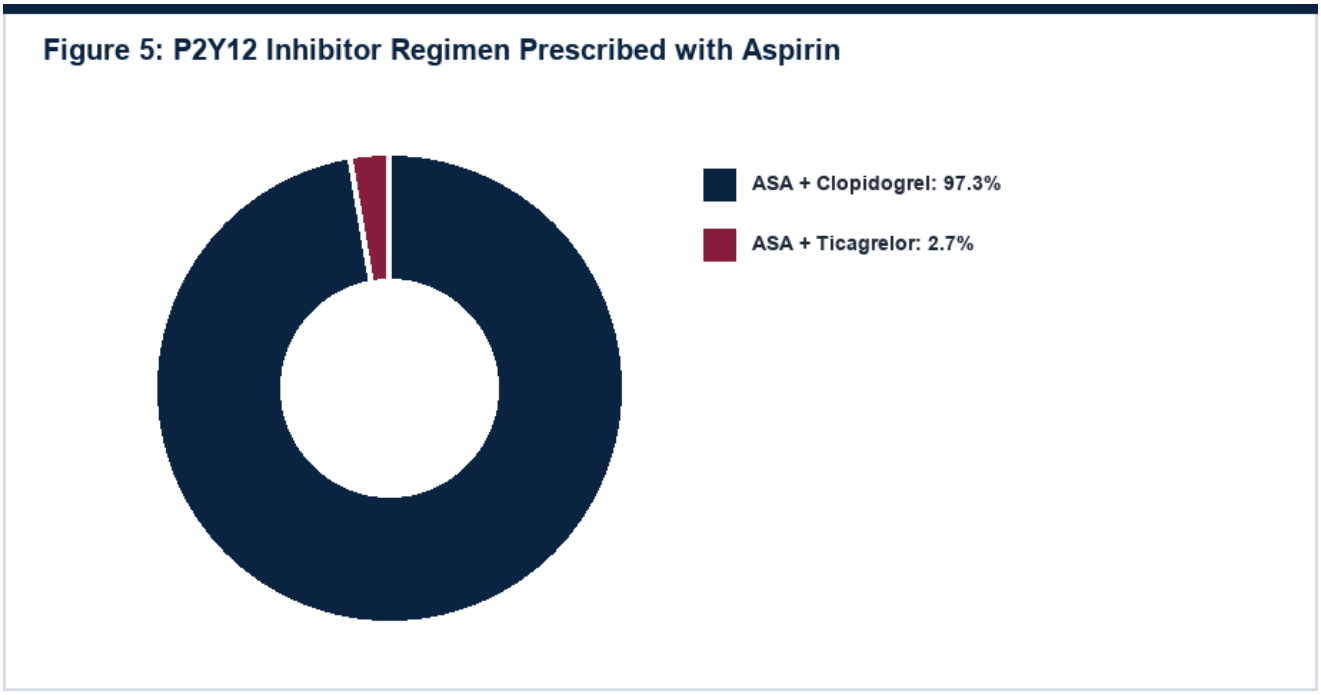


Figure 5: P2Y12 Inhibitor Regimen Prescribed with Aspirin