

To Study the ADR and Management of Dual Antiplatelet Therapy (Aspirin and Clopidogrel) In Post Percutaneous Transluminal Coronary Angioplasty (Ptca)”

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Dual Antiplatelet Therapy (DAPT) is the gold standards treatment for cardiovascular complications. The management of DAPT in terms of cardiovascular complications require continuous monitoring as it is associated with increased risk of bleeding. The clinical Pharmacist can contribute to overcome this complication by designing an individualized dosage regimen which effectively reduce the mortality with morbidity in the patients. The study emphasizes on management of DAPT therapy and associated ADRs in post-Percutaneous-Transluminal-Coronary-Angioplasty (PTCA). It is a descriptive study carried out in 110 patients from the month of December 2021 to June 2021. The data is collected from patients and is evaluated by comparing with standard guidelines like ACC/AHA and ESC. The information which is cross checked with the determined response to the antiplatelets. A total of 110 patients were involved in the research which accounted for 66 male patients followed by 44 female patients. The majority of the patients involved in the study were between 41-50 (61.18%). The DAPT (Aspirin + Clopidogrel) therapy was prescribed in 67.28% of the subjects Although the remaining subjects were treated along single antiplatelet (SAPT) therapy (Aspirin – 16.36%, Clopidogrel-16.36%). It was observed when the study that the therapeutic efficacy associate with the DAPT therapy is comparatively higher than single drug regimen. The ADRs associated with DAPT therapy was found to be 10 whereas the single drug regimen accounted for 4. The study emphasized on effectiveness and ADRs associated with the DAPT therapy and single antiplatelet regimen. During the study, it was observed that the ADR occurred in the patient associate with the comorbidities and had a longer duration of exposure. The research has emphasizes the importance of monitoring APT

regimen from time to time in order to reduce the incidence of ADR thereby increasing the quality of life of a patient.

Key words: Antiplatelet medications, bleeding, percutaneous coronary intervention, major adverse cardiovascular events.

I. INTRODUCTION

ANTIPLATELET THERAPY: -

Antiplatelets are a series of drugs that stop the sticking and forming of a blood clot from blood cells (called platelets). [1-6].

Patients are generally administered antiplatelets if they are history

- Artery disease (ADD)
- Attack of the heart
- Angina
- ischemic attacks stroke or temporary (TIAs)
- Vascular peripheral illness (PVD)

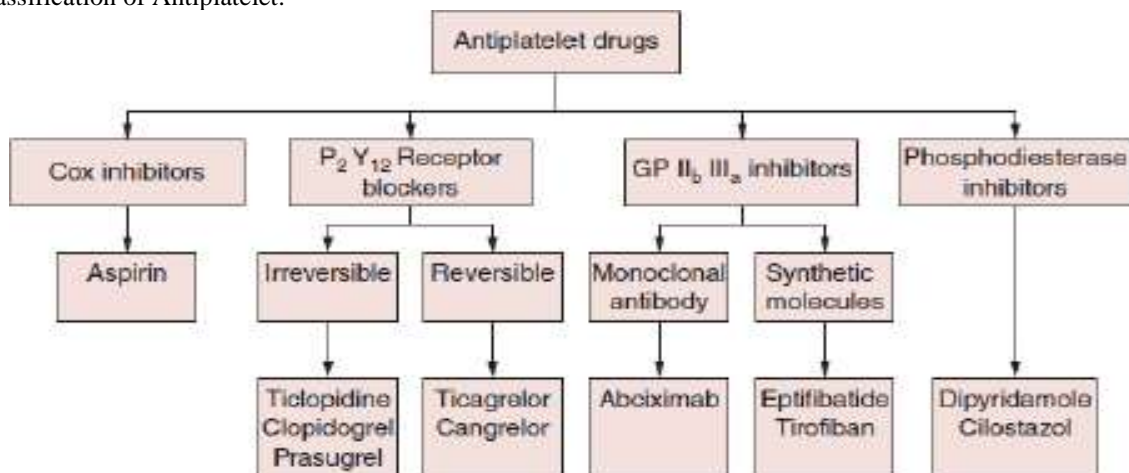
DUAL ANTIPLATELET THERAPY (DAPT):

The term DAPT was specifically employed to refer to the combination of aspirin and P2Y12 inhibitory antiplatelet treatment (Clopidogrel, Prasugrel or Ticagrelor). For most ACC/AHA and ESC guidelines, most studies were conducted in comparison with the therapeutic period either shorter (3 to 6 months) or longer (18 to 48 months). [7-9].

Indications for the Dual-Antiplatelet Therapy (DAPT):

Increasing in the incidence of thrombotic events later percutaneous coronary intervention (PCI) and acute coronary syndrome (ACS) has resulted from DAPT inhibitors than single antiplatelets therapies (SAPT) but has been accompanied with an increased risk of serious hemorrhage. [10-13].

Classification of Antiplatelet: -



II. METHODOLOGY

Study procedure:

This is a retrospective descriptive research conducted over a period of six months. The study was conducted in the Cardiology department at Mallareddy Narayana Multispecialty Hospital. The patient's data were collected in MRD (Medical Record Department) from the initial half year of 2019 to 2020 followed by another initial half year of 2020-2021. The data from appropriate patients is collected into the data collection was designed. After the data is collected, it is evaluated by comparing with standard guidelines like ACC/AHA and ESC.

The information which we gathered will be cross checked with the determined response to antiplatelets. At that point we will be going for genuine assessment by reaching the patients by call or going straight forwardly to the patients with proper precautions.

Ethics approval:

The study protocol was prepared, submitted and approved by the hospital ethics committee.

Study design:

It is a retrospective descriptive study conducted

Study period:

The study is conducted for a four months period from December 2020-June 2021.

Sample size:

110 subjects were considered.

Study site:

The study is conducted in the department of MRD, Cardiology in Mallareddy Narayana Multispecialty Hospital, Suraram 'X' road, Jeedimetla, Hyderabad.

Inclusion criteria:

- Patients endorse on DAPT along aspirin and clopidogrel from divisions including cardiology.
- Patients with both the genders.

Exclusion criteria:

- Pediatrics, Pregnant women.
- Patients with an age group of >60 years and <18 years.
- Patients with conditions like CKD, CLD, CABG, other chronic illness and other autoimmune disorders etc...,

Need for the study:

- To observe the prevalence of hemorrhage episodes caused by DAPT taken in a sample size.
- To monitor the alternative therapy like SAPT (Single antiplatelet therapy) or Dose adjustment.
- To identify if there is a risk of hemorrhagic condition.
- To promote medication adherence.
- To improve quality of life.

III. RESULTS AND DISCUSSION

- Subjects taken from MRD (Medical Record Department) =68%
- Subjects taken from ward rounds = 42%

1. Distribution of subjects according to the gender: -

Among the total subjects, the majority of 60% were male & the remaining 40% were female. The

pictorial representation of gender-wise grouping of subjects is given in the figure 1.

Gender	N	Percentage [%]
Male	66	60.00%
Female	44	40.00%
Total	110	

Table.1: Gender-wise grouping of subjects

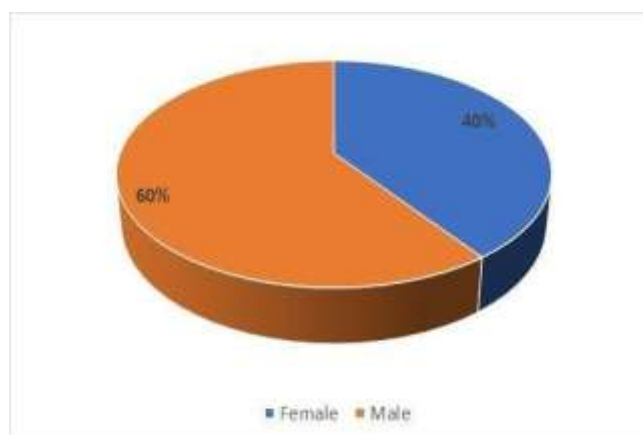


Figure. 1: Pictorial representation of gender-wise grouping of subjects.

2. Distribution of subjects according to age: -

The 100 subjects enrolled were reviewed based on their age & are grouped into different age groups along a class interval of 10. The maximum number of subjects enrolled were in between the age group of 41-50 (61.18%), followed by subjects in the age group of 51-60

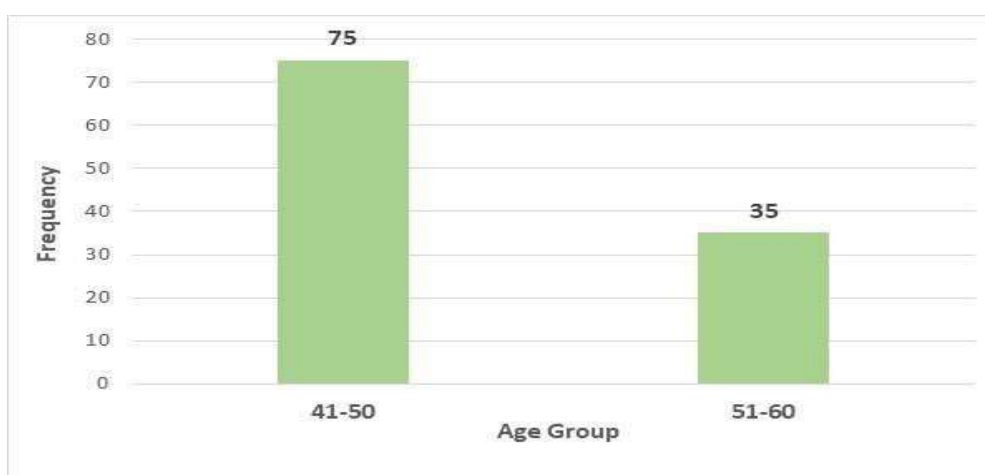
(31.81%), the mean age is found to be 40-59 (0.4%). The descriptive statistics of age are given in Table no. 2.1

Age group	Frequency[N]	Percentage (%)
41-50	75	61.18
51-60	3	31.81

Table. 2 Distribution of subjects according to the age

	N	Minimum (MIN.) age	Maximum (MAX.) age	Mean	Std. Error	Std. Deviation	Variance	Skewness
AGE	110	40	59	47.97	0.538	5.64	31.843	0.478

Table no. 2.1: Descriptive statistics of age



Graph 2: Graphical distribution of subjects according to the age

3. Subjects according to place of residence: -

Total subjects enrolled in the research are classified according to their place of residence. Among them, the subjects are almost equal in number from both rural (n=83) and urban (n=27). The pictorial representation of subjects according to their place of residence is shown in Figure 3.

Place of residence	N	Percentage [%]
Rural	83	75.45
Urban	27	24.54
Total	110	

Table.3: Distribution of subjects according to their place of residence

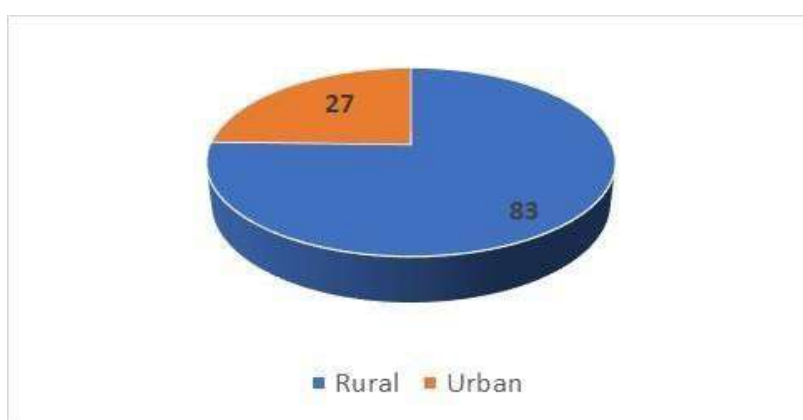


Figure 3: Pictorial representation of place of residence wise distribution of subjects

4. Knowledge of subjects according to the place of residence and their awareness of prescribed Antiplatelets: -

Of all the 110 subjects, rural accounts for 17% and urban accounts for 5% of the total enrolled population. It was found in the urban population is more aware of their antiplatelets drug name that has been prescribed to them rather than the rural population.

Place of residence	Aware	Unaware
Rural	17	66
Urban	5	22

Table.4: Knowledge of subjects according to the place of residence and their awareness of prescribed anti-platelets

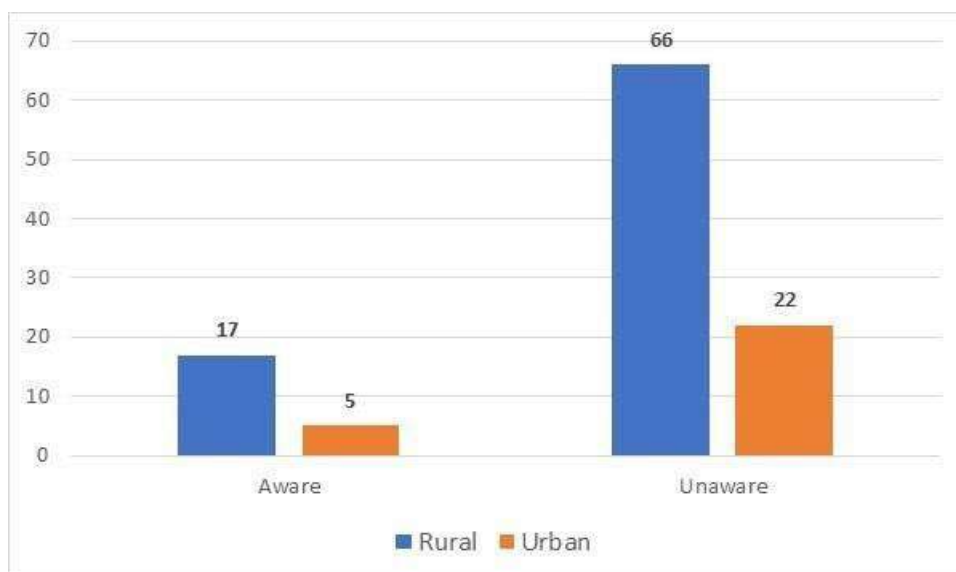


Figure 4: Graphical distribution of subjects according to the place of residence and level of awareness of their prescribed Anti-Platelets.

5. Knowledge of the subjects about the complications: -

Large number of patients (73.6%) of the total enrolled subjects are not aware to the complications. Only 26.36% of the subjects aware

about the complications and this awareness in subjects is either through counselling by the health care professionals or through the self-experience of some of the complications.

Subject knowledge on complications of Antiplatelets Therapy	N	Percentage (%)
Yes	29	26.36
No	81	73.6

Table.5: Knowledge-wise distribution of subjects

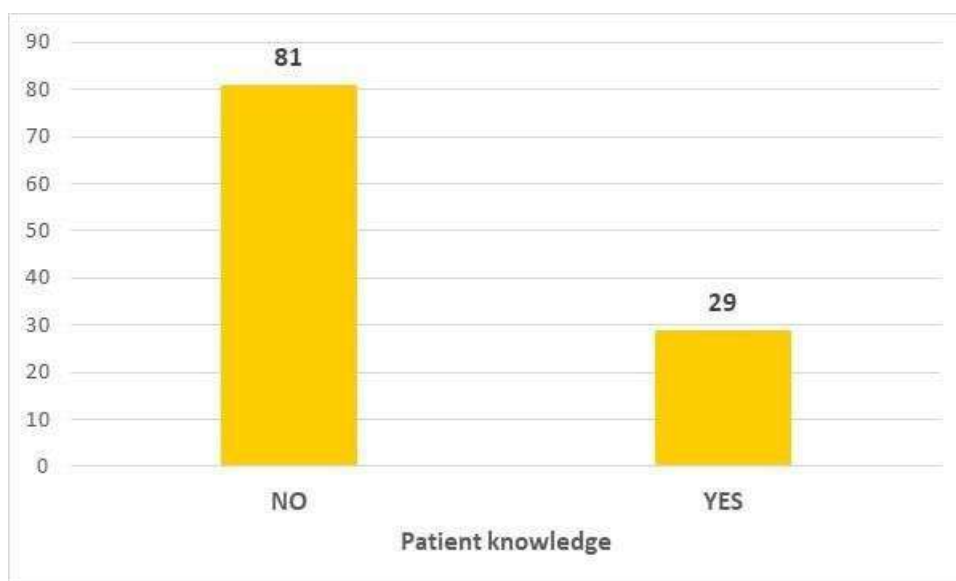


Figure 5: Graphical distribution of subjects based on their knowledge on the complication Table 5 shows that most of the patients (73.6%) don't have well knowledge about complications that associated along given dual antiplatelet therapy. Whereas 26.36% of the patients are having knowledge about complications counseling through healthcare professionals or through self-experience.

6. Prevalence of knowledge on complications of PTCA among males and females-

Level of Awareness	Males	Females
	Number/(Percentage)	Number/(Percentage)
Aware of complications	23 (34.8)	12 (27.2)
Unaware of complications	43 (65.2)	32 (72.8)

Chi-square: - 39.997(p=<0.0005)

Table.6: Prevalence of knowledge on complications of PTCA among males & females

Table 6 shows the prevalence of knowledge on complications of PTCA among males and females. Males are more aware of the complications when compared to females. Chi-square test was performed to examine the relation between males, females and knowledge on complications of bleeding and thrombocytopenia. The relation between these variables was found to be significant, $\chi^2 (1, N=110) = 39.997, p=0.005 (p<0.005)$. Males are more aware of the complications than females.

7. Prevalence of adherence among males and females: -

Gender	Prevalence of PTCA (n)	Percentage (%)
Male	66	40.00
Female	44	60.00

Chi-square:-39.997(p=0.005)

Table.7: Prevalence of adherence to Anti-Platelets medications among males & females

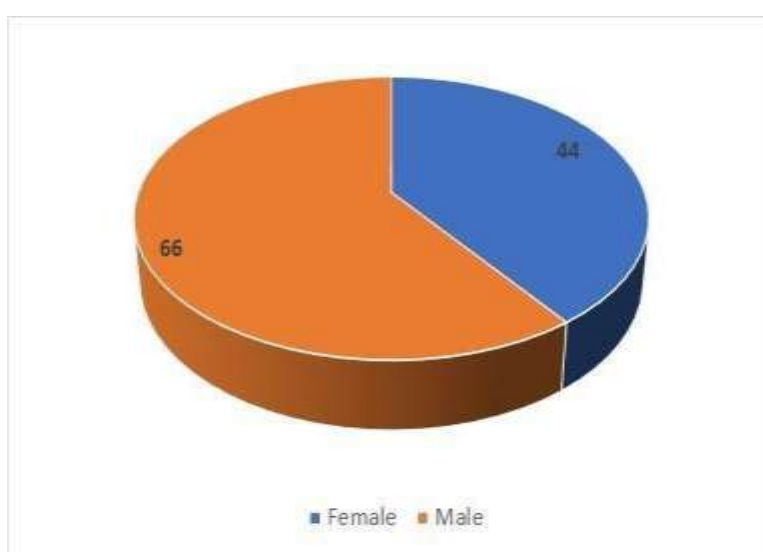


Figure 6: Pictorial representation of PTCA prevalence distribution of male and female.

Table 7 shows the prevalence of adherence to Antiplatelets medications among males & females. Males are more adherent to their Anti- Platelets medications when compared to females. Thus, the percentage of females being non-adherent to their anti- platelets medications is high when compared to males. Chi-square test was done to examine the relation between males, females and their adherence to medications. The relation between these variables was significant, $\chi^2 (1, N=110) = 39.997, p=0.005(p<.05)$. Males are more adherent to their Anti- Platelets

medications than females.

8. Distribution of subjects according to the prescribed number of antiplatelets medications: -

Out of a total of 110 subjects, the maximum number of subjects is prescribed with only a single antiplatelets medication per day (67.27%). More than one antiplatelets medications / day have been prescribed to 32.72% of the total subjects.

No. of Antiplatelets medications	N	Percentage (%)

Aspirin Clopidogrel	18	16.36
Aspirin + Clopidogrel	18	16.36
	74	67.27

Table. 8: Distribution of subjects according to the prescribed number of antiplatelets medications.

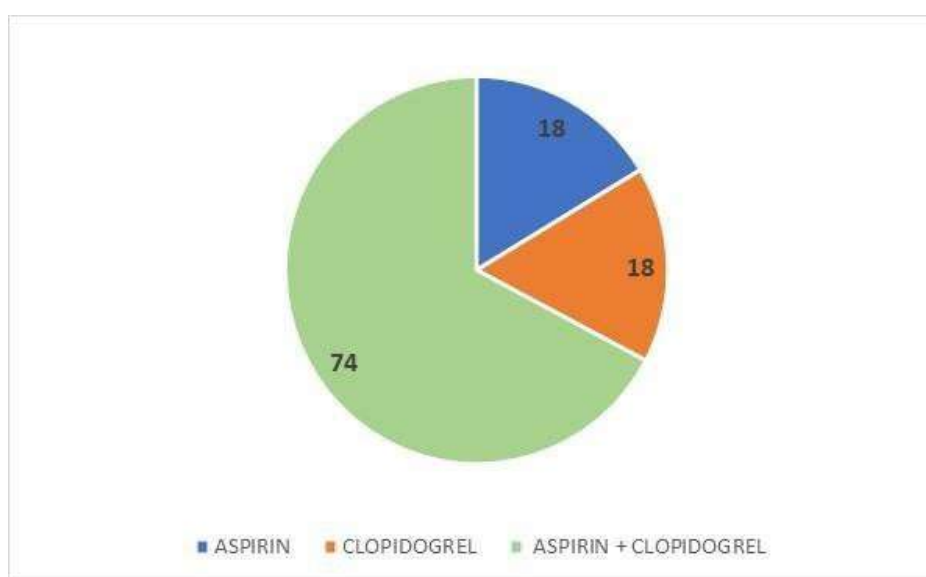


Figure 7: Pictorial representation of prescribed number of antiplatelets medications.

Table -8 shows the Majority of patients have been prescribed DAPT therapy Aspirin +clopidogrel (67.28%) Although the remaining subjects were treated along single anti platelet therapy (Aspirin-16.36%, clopidogrel-16.36%).

IV. CONCLUSION

We conclude by saying that the complex post-PTCA cases and related dangers represent a common clinical picture, which suggests a requirement that patients should be identified with the high risk of appropriate double antiplatelet therapy (DAPT). With the exception of the enhanced MACE associated with DAPT, the risk of bleeding can be visible in adapting to both anti-platelet types and should lead the decision-making on the treatment. The common definition of complex PCI, employed MACE and bleeding rates can facilitate a comparison of results and the conduct of large, randomized, controlled trials evaluating various DAPT (Aspirin + Clopidogrel)

and use of alternative agents, such as SAPT therapy (Aspirin, Clopidogrel).

The majority of patients were males (60%) and the remain were females (40%). According to age wise the majority of patients were >40 years and the majority of people from the village areas are uneducated and unaware of the medications of DAPT and its complications when compared with urban people.

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