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Gastro-Intestinal Adverse Events To Anti-Platelet Therapy Among Patients Receiving Cardiovascular Care In A Tertiary Hospital In Southern In Nigeria

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ABSTRACT

Background The gold standard for primary and secondary prevention of cardiovascular events is low-dose antiplatelet treatment. Due to its advantageous antiplatelet qualities, aspirin has become a medication primarily used to prevent cardiovascular disease. The use of aspirin has been restricted due to its association with gastrointestinal (GI) damage, regardless of its therapeutic applications for which reasons clopidogrel is administered as a substitute. Treatment may be stopped if dyspeptic symptoms arise. The study aims to ascertain the frequency of dyspeptic symptoms in individuals on low-dose antiplatelet treatment for both primary and secondary cardiovascular event prevention in the southern part of Nigeria.

Method: The retrospective study included 291 patients' demographic data (age, gender, antiplatelet therapy, and presenting GI effects) which were on Low-dose aspirin (LDA) and clopidogrel as antiplatelet therapy

Result: In the study, 52% of subjects were female and 45% were male, aged 16 to 94 (mean age: 55 ± 15.4 years). The majority (54.2%) fell within the 41–60 age group. Antiplatelet therapy included low-dose aspirin (27.5%) and clopidogrel (85.5%). 53.5% of subjects on clopidogrel had a medication history with the use of aspirin and 33% of subjects presented with dyspeptic symptoms which led to the use of clopidogrel instead of LDA. The remaining 13.5% of subjects reported dyspeptic symptoms on use. Dyspeptic symptoms observed included epigastric pain (26.46%), heartburn (14.43%), bloating (12.03%), and dark stools (6.87%). Dyspepsia was noted in 59.79%of patients on antiplatelet therapy in the study population.

Conclusion: Among patients on antiplatelet therapy, the high prevalence of dyspeptic symptoms emphasizes the importance of follow-up by monitoring and managing gastrointestinal side effects in these patients.

Key Words: *Prevalence, dyspepsia, antiplatelet therapy, cardiovascular care, southern Nigeria, cardiovascular disease, tertiary hospital.*

INTRODUCTION

A significant risk of subsequent reoccurrence exists for patients who survive a primary cerebrovascular or cardiovascular disease (CVD) event.(1,2) Therefore, prevention of reoccurrence is the goal of therapy.A vital component of these predisposed patients' preventive care for subsequent cardiovascular disease (CVD) incidents is antiplatelet therapy. Low-dose aspirin (LDA), is a medication that is very successful in lowering the incidence of CVD events. It is typically the foundation of the antiplatelet regimen. However, it carries a significant risk of dyspepsia.(2)

The spectrum of cardiovascular conditions for which antiplatelet therapy is required is broad and this includes; systemic hypertension, myocardial infarction, heart failure, cardiac arrhythmia, diabetes mellitus, and other conditions.(3)

For the primary, secondary, and tertiary prevention of adverse cardiovascular events in individuals at high risk, low-dose antiplatelets, particularly low-dose aspirin, have been prescribed more frequently throughout the past 20 years.(3) Several national and international guidelines suggest long-term use of low-dose antiplatelets in these cases. (2,3)

A typical and commonly used low-dose antiplatelet is Aspirin, which is 25% more effective than a placebo in lowering the risk of stroke, myocardial infarction, or death from vascular causes. (3)Despite these benefits, upper gastrointestinal symptoms ranging from minor events such as dyspepsia and gastroduodenal erosions to life-threatening gastroduodenal ulceration, bleeding, and perforation are major side effects of aspirin.(4) In the intensively treated patients of the Hypertension Optimal Treatment (HOT) Study, randomization to low-dose aspirin (75 mg daily) versus placebo significantly reduced cardiovascular events (−15%) and myocardial infarction (−36%), but increased major bleedings (+65%)(5,6).

The prevalence of dyspepsia in Nigerian patients receiving low-dose antiplatelets for the main or secondary prevention of adverse cardiovascular events is sparsely documented. According to a study conducted in a rural community in northeastern Nigeria, dyspepsia affects 26% of the general population and is linked to the older population.(7) This study was designed to assess the prevalence and pattern of dyspepsia in patients on low-dose antiplatelet aspirin attending the cardiology clinic of a tertiary health facility in Port-Harcourt, Rivers.

METHODS

The study included 291 prescriptions' demographic data (age, gender, antiplatelet therapy, and presence of dyspeptic symptom) of which were on LDA and clopidogrel as antiplatelet therapy.

This is a retrospective study of records of patients receiving antiplatelet therapy for prevention of CVD from the pharmacy department at the GoodHeart Medical Consultant Hospital, Port Harcourt, Rivers State, Nigeria over 6 months from 291 patients (August 2023 to January 2024)

Inclusion criteria; the patients who visited the center diagnosed with cardiovascular disease and on antiplatelet therapy. **Exclusion criteria**; non-CVD patients treated with non- antihypertensive agents, unconscious patients (patients depending on other people for medicine administration), and drug addicts.

Ethical clearance was obtained from the research ethical review committee of the Goodheart Medical Consultant Hospital. Antiplatelet medications were classified into different classes: patients on low dose Aspirin and Clopidogrel presenting with dyspepsia or not on follow-up. Data were analyzed and described.

RESULTS

A total of 291 prescriptions were included in the final analyses. 52% of the patients were female and 45% male Their ages ranged from 18 to 94 years with a mean age of 55 ± 15.4 years. The majority (54.2%) were within the age group of 41–60 years. Hypertension/hypertensive heart disease was the most common indication for prescribing. The baseline characteristics are presented in Table 1.

Figure 1 Antiplatelet Therapy Distribution in The Population. The patients were placed on different antiplatelet therapy such as low-dose aspirin (27.5%) and clopidogrel (85.5%). 53.5% of subjects on clopidogrel had a medication history with the use of aspirin and 33% of subjects presented with dyspeptic symptoms which led to the use of clopidogrel instead of LDA. The remaining 13.5% of subjects reported dyspeptic symptoms on use.

Table 1 shows the baseline characteristics of the study population.

Mean ± Sd	
Age	55 ± 15.4
Systolic	151±13.5
Diastolic	94.7±8.4
Sex (%)	
Male	156(53.61)
Female	135(46.39)
Medications Use (%)	
Low Dose Aspirin (75-100mg)	42(14.43)
Clopidogrel (75mg)	249(85.57)

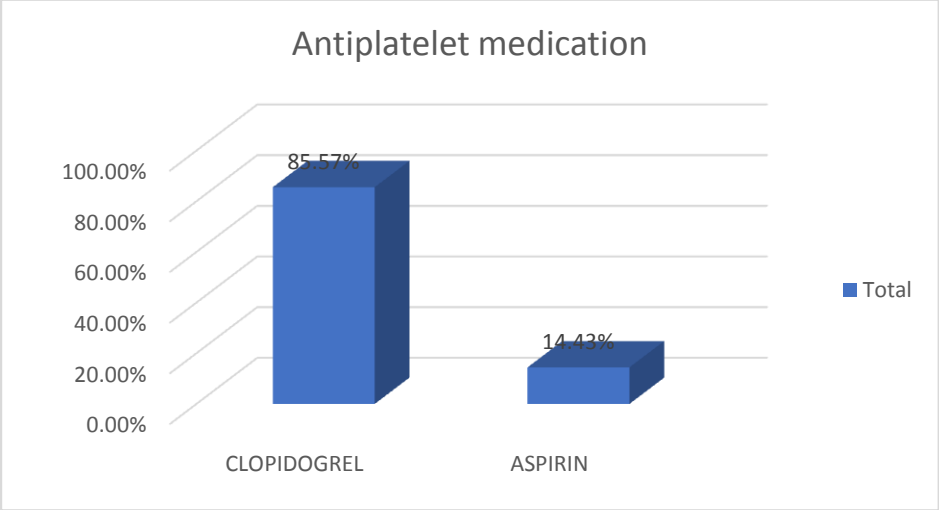
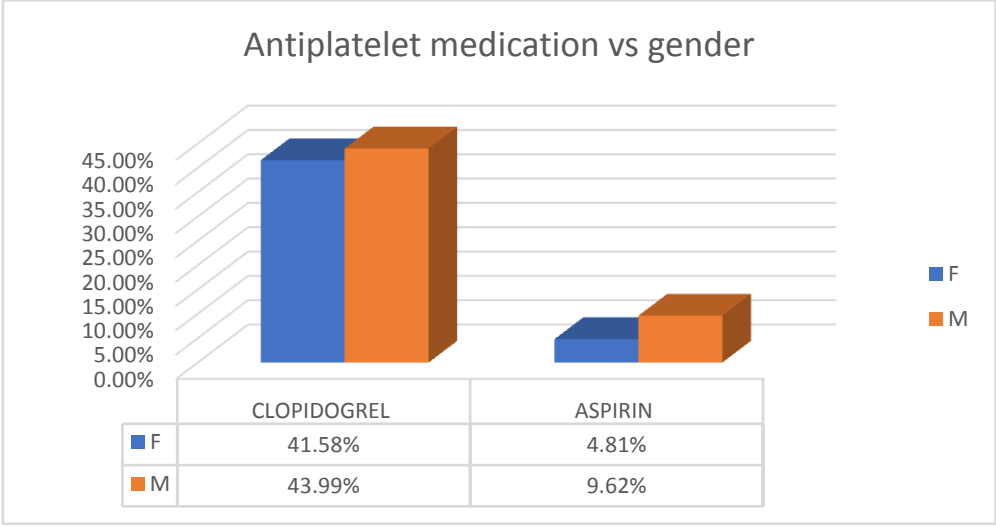


Fig 1: Antiplatelet Therapy Distribution in the Population

Figure 2 shows the Use of Antiplatelet Medications among different genders. 4.81% of females were on aspirin while 9.62% were males. P value = < 0.05 (significant).



	CLOPIDOGREL	ASPIRIN
F	41.58%	4.81%
M	43.99%	9.62%

Fig 2: Use of Antiplatelet Medications Distribution Versus Gender

The prevalence of dyspeptic symptoms observed was Epigastric pain (26.46%), heartburn or burning in the stomach (14.43%), and indigestion (as bloating and excessive belching (12.03%). Dark and tarry stools (6.87%) were also observed by some patients. 40.21% of the patients showed no dyspeptic symptoms in using either antiplatelets.

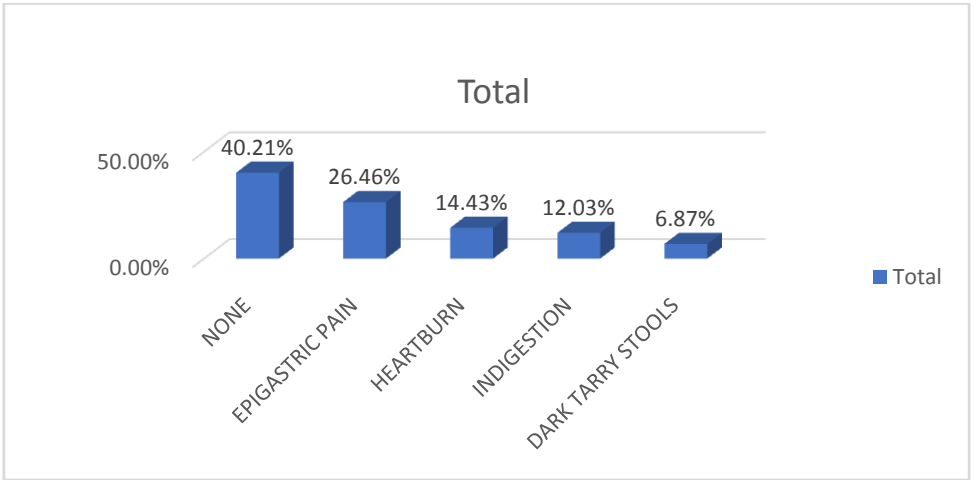
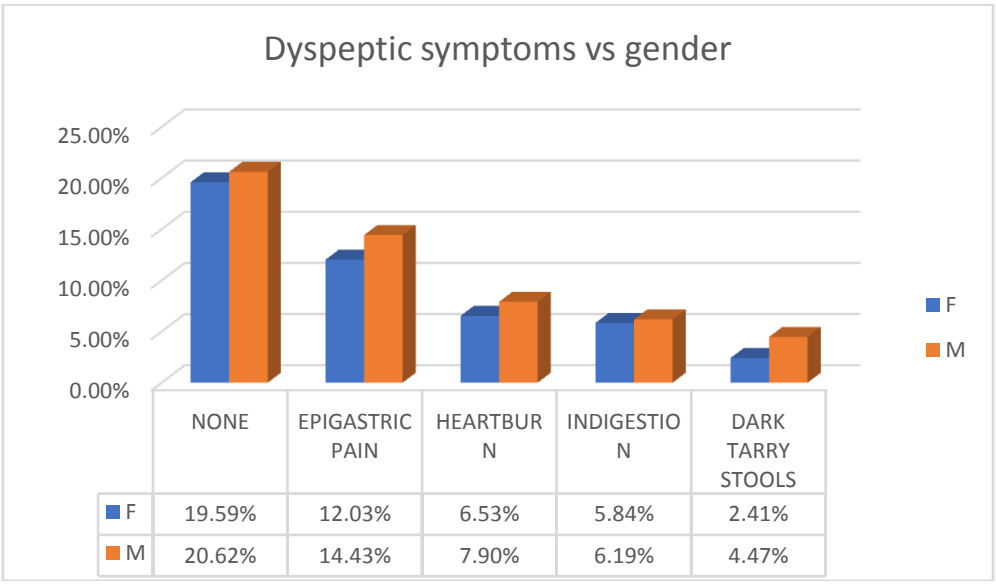


Fig 3: Prevalence of dyspeptic symptoms in patients with low dose aspirin Therapy

Figure 4 shows the Prevalence of Dyspeptic Symptoms Versus Gender in The Population. P value=<0.05(significant) The totality of 59.79% indicates the prevalence of dyspepsia in patients on antiplatelet therapy in the southern part of Nigeria. Males presented with more dyspeptic symptoms as epigastric pain (14.43%), heartburn (7.9%), indigestion (6.19%), and dark and tarry stools (4.47%) than the females presenting with epigastric pain (12.03%), heartburn (6.53%), indigestion (5.84%) and dark and tarry stools (2.41%)



	NONE	EPIGASTRIC PAIN	HEARTBURN	INDIGESTION	DARK TARRY STOOLS
F	19.59%	12.03%	6.53%	5.84%	2.41%
M	20.62%	14.43%	7.90%	6.19%	4.47%

Fig 4: Prevalence of Dyspeptic Symptoms Versus Gender in The Population

Prevalence of dyspeptic symptom versus antiplatelet therapy, 20.96% of the subjects on clopidogrel have epigastric pain against the 5.50% on aspirin with the same symptom. 10.65% on clopidogrel and 3.78% on aspirin, all have heartburn. 10.31% on clopidogrel and 1.72% on aspirin, all have indigestion. 4.81% on clopidogrel and 2.06% on aspirin, all have dark tarry stools. 38.83% on clopidogrel and 1.37% on aspirin have no dyspeptic symptom.

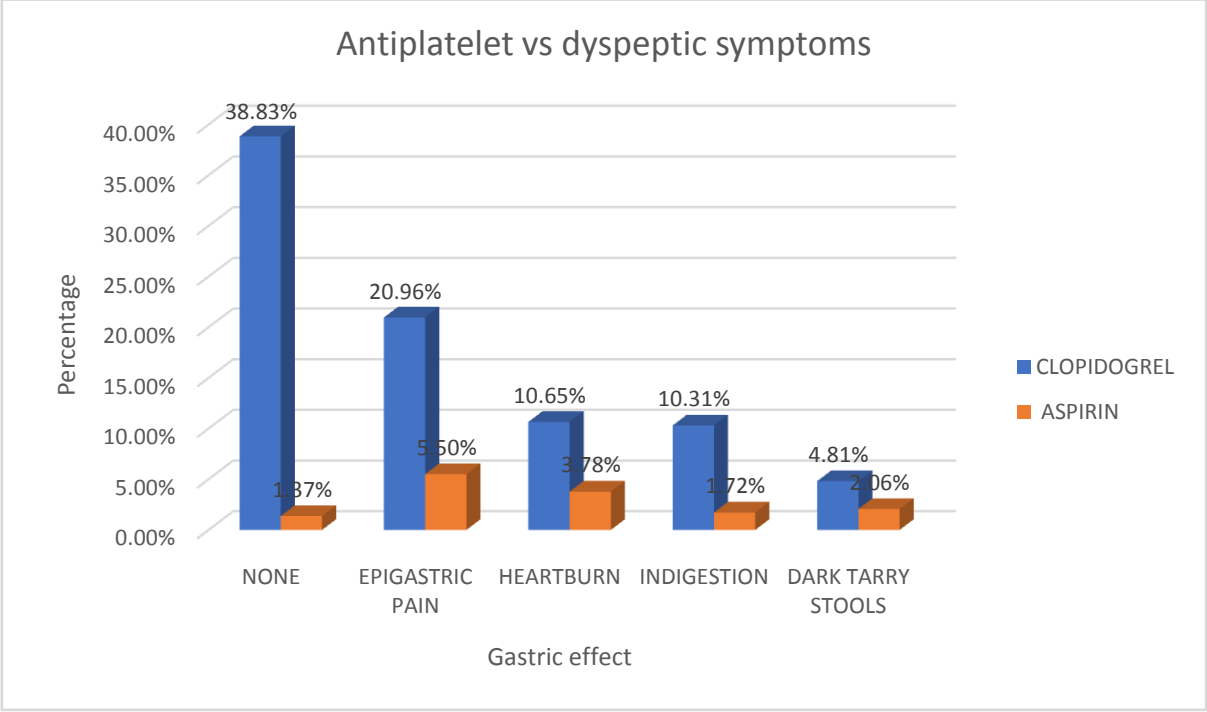


Fig 5: Prevalence of dyspeptic symptoms in different antiplatelet medication

DISCUSSION

The epidemiology of dyspepsia is still replete with problems. Some of which (for example, questions of symptom definition) are potentially inadequate.(8) However, there is still much to be learned about the prevalence and incidence of those symptoms that come to consultation, let alone their frequency in the community. The limited data available suggest the need for further studies.

In this study, the pattern and prevalence of low-doseaspirin-induced dyspepsia in cardiovascular cases were dissected, with the majority of patients being within the age group of 41-60(54.2%) indicating that this group was more likely to require antiplatelet therapy due to the high rate of cardiovascular events occurring at this age group.(9–11) The gender distribution among patients was almost equal, with 45% male patients and 52% female patients. The subjects were between the ages of 16 and 94, with a mean ± SD of 54.8 ± 15.1.

In this study, A higher percentage of males (9.62%) were prescribed aspirin compared to females (4.81%), indicating potential differences in prescribing patterns between genders. The presence of dyspepsia was significantly associated with the male gender as opposed to a recent meta-analysis(12) carried out in the united states but agreeable by an African study in Mumbai.(13). Low-dose aspirin (27.5%), and clopidogrel (85.5%), were the most often prescribed antiplatelets for hypertension/hypertensive heart disease. 53.5% of subjects on clopidogrel had a medication history with the use of aspirin and 33% of subjects presented with dyspeptic symptoms which led to the use of clopidogrel instead of LDA. The remaining 13.5% of subjects reported dyspeptic symptoms on use. Most patients who were on low-dose aspirin were switched to clopidogrel due to the unwanted adverse effects of GI disturbances(14–16) leading to the increase in tolerability and acceptability by the patients.

A significant number of patients receiving antiplatelet medication experienced dyspeptic symptoms; the most prevalent one was epigastric pain (26.46%), which was followed by heartburn (14.43%) and indigestion (12.03%). 6.87% of patients had dark, tarry stools, which may be a sign of gastrointestinal bleeding brought on by antiplatelet medication.

The results of this study shows that the prevalence of symptoms of dyspepsia in patients on antiplatelet therapy particularly LDA in southern Nigeria is 59.79% presenting as epigastric pain(26.4%) as the most prevalent feature of dyspepsia in concurrence with a 2020 study in the southern part of Nigeria(17) and other dyspeptic symptoms have changed little since the surveys carried out by Doll et al (30%) in 1951 and by Weir and Beckett (25%) in 1968, although the observation periods in all three studies were different(3,8) The pattern and prevalence are also seen to vary among the regions of the nation as seen in a 2012 study in Lagos, Nigeria. (7,18,19)

Many patients were commenced on clopidogrel ab initio due to a history suggestive of dyspepsia. This could be influenced by the known side effects of aspirin, particularly gastrointestinal irritation and bleeding. However dyspeptic symptoms were significantly high even among patients on clopidogrel, therefore the mechanism of dyspeptic symptoms which was hitherto attributed to the acidic nature of aspirin (acetylsalicylic acid) may not be the major cause of GI symptoms in patients on antiplatelet therapy.

CONCLUSION

Gastrointestinal disturbances, such as dyspepsia, are common among Nigerian patients on low-dose antiplatelets. These disorders have a detrimental effect on the patient's daily activities and adherence to therapy. With antiplatelet therapy in particular, the high prevalence of dyspeptic symptoms emphasizes how critical it is to monitor and manage gastrointestinal side effects in patients on antiplatelet therapy. This may affect patients' compliance with their treatment and their overall results. Co-prescription along with a PPI lowers the risk of progression and therefore is duly recommended.(20)

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