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Comparative Effectiveness of Ecosprin Oral as Monotherapy vs Dual Antiplatelet with Ecosprin and Clopidogrel as Combination Therapy in Treating Ischemic Cerebrovascular Stroke Management

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ABSTRACT

The rupture of a blood artery that supplies blood to a part of the brain may lead to a stroke. Ischemic stroke is mainly caused by a blockage or reduced blood flow to the brain due to a blood clot [thrombus or embolus], most commonly due to sudden confusion, vertigo, and loss of balance which is characterized by ischemic stroke symptoms. Among patients with ischemic cerebrovascular stroke, we aimed to compare the efficacy of Ecosprin as monotherapy with clopidogrel as combination therapy in the ischemic stroke patients aged of 20 and above. The main objective is to determine if ecosprin and clopidogrel are safe and effective for individuals with ischemic CVA and also to track the old stroke in patients using Ecosprin and Clopidogrel. This is a prospective and observational study done after ethical committee approval. A total of 54 patients were included in the study. Out of 54 subjects which clearly indicates the age group of >80, were highly affected by stroke. Sudden confusion, loss of balance and dizziness were the most common symptoms. Males were more prone to stroke than Females. The most common risk factors were hypertension, diabetes mellitus, CAD, Old CVA and hypothyroidism in which hypertension was [90.7], diabetes mellitus [68.5], and hypothyroidism [18.5], CAD [14.8], old CVA [9.3]. The laboratory parameters, such as age [0.063], platelets [0.715], pH [0.385], $PaCO_2$ [0.607], PaO_2 [0.848], and HCO_3 [0.175], show a statistically significant difference between monotherapy and combination therapy. Our findings show that the progressive improvement of laboratory parameters with clopidogrel as combination therapy in ischemic CVA. The analysis of this study showed a significant statistical P value of 0.05, which implies the effectiveness of clopidogrel as combination therapy. This study demonstrates that clopidogrel as combination therapy shows highly effectiveness and safety in ischemic CVA.

Keywords: Ischemic CVA, ecosprin, clopidogrel. Monotherapy, diabetes mellitus.

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INTRODUCTION

The occlusion or rupture of a blood artery that supplies blood to a part of the brain may lead to a stroke. It is important to know and watch out for certain signs that might indicate a stroke. Types of cerebrovascular accident: Two primary mechanisms exist for the occurrence of cerebrovascular events, also known as stroke. Blood artery ruptures induce hemorrhagic strokes, while occlusions cause ischemic strokes. Brain cells die as a consequence of a lack of blood and oxygen, which happens in both types of strokes [1]. If a blood clot blocks a blood artery, oxygen and blood cannot reach a part of the brain, causing the most common kind of stroke, it is called an ischemic stroke [2][3]. This may go one of two ways. One cause of embolic stroke is a blood clot that travels from another part of the body and gets stuck in a blood artery in the brain. A thrombotic stroke, on the other hand, happens when the clot develops in a brain blood artery. A thrombus, or blood clot, known as cerebral thrombosis occurs when fatty plaque

builds up in a blood vessel supplying the brain with blood. A cerebral embolism is a blood clot that develops in the circulatory system at another site, such as the heart or big arteries in the upper chest or neck. After breaking off, a piece of the blood clot makes its way into the circulation and travels through brain arteries until it reaches blood channels that are too small to let it pass. The irregular heartbeat known as atrial fibrillation is a major risk factor for embolism. Because of this, blood clots may develop in the heart, get loose, and end up in the brain. When a blood artery bursts, or haemorrhages, it causes a hemorrhagic stroke because it blocks the flow of blood to a portion of the brain. Any blood artery in the brain may have a haemorrhage, or it may happen in the membrane covering the brain [4,5]. Antiplatelet therapy's function in preventing strokes by lowering platelet aggregation and the likelihood of clot formation, antiplatelet treatment is essential in preventing recurrent ischemic strokes [6,7].

Patients with transient ischemic attacks [TIA] or non-cardioembolic ischemic stroke are typically treated with antiplatelet therapy It is logical to assume that combining two antiplatelet medicines with different mechanisms of action may increase antithrombotic efficacy because the diverse antiplatelet medications currently on the market inhibit distinct stages of the platelet activation process. Improved antithrombotic effects, however, may raise the risk of systemic or cerebral bleeding even though they might give patients who have had ischemic stroke and TIA more defense against thrombotic episodes in the future [8]. As previously mentioned, long-term combination therapy was defined as aspirin plus clopidogrel treatment that lasted for at least a year. Dual treatment lasting three months to a year was considered middle-term combination therapy. Dual treatment lasting ≤ three months was considered short-term combination therapy. Recurrence of strokes [whether ischemic or hemorrhagic, fatal or nonfatal] was the main outcome. Major vascular events and major bleeding [moderate to severe bleeding] were among the secondary outcomes [9–11].

Aspirin [Ecosprin] is a common antiplatelet medication that reduces platelet aggregation and vasoconstriction by blocking cyclooxygenase-1 [COX-1] and thromboxane A2 production [12].

By blocking the P2Y12 receptor, clopidogrel inhibits platelet activation and aggregation via an alternative mechanism. Even while taking aspirin alone can reduce the risk of stroke, some high-risk individuals need Dual Antiplatelet Therapy [DAPT], which combines aspirin and clopidogrel, to have a stronger antiplatelet impact [13,14]. Research indicates that DAPT lowers the risk of myocardial infarction [MI] and other vascular events, including the recurrence of stroke, making favored approach in certain cases [15–17].

Stroke symptoms frequently appear suddenly

These include:

- Abrupt facial, arm, or leg numbness or weakness [particularly on one side of the body].
- Abrupt confusion, difficulty speaking or understanding speech.
- Abrupt difficulty seeing in one or both eyes.
- Abrupt difficulty walking, dizziness, loss of balance, or coordination.
- Abrupt, severe headache without apparent cause.

Circulatory conditions significantly increase the risk of ischemic stroke because they contribute to blood clot formation or narrowing of blood vessels. Here's how each condition plays a role:

High Blood Pressure [Hypertension] – The most significant risk factor, as it damages arteries, making them more prone to clots and rupture.

High Cholesterol – Leads to plaque buildup [atherosclerosis] in arteries, restricting blood flow and increasing the risk of blockages.

Atrial Fibrillation [AFib] – Causes irregular heartbeats, leading to blood pooling and clot formation, which can travel to the brain.

Sickle Cell Anemia – Abnormal red blood cells can clump together, blocking blood vessels and reducing oxygen supply to the brain.

Clotting and Bleeding Disorders – Conditions like antiphospholipid syndrome can increase the risk of abnormal clot formation.

Congenital Heart Defects – Structural heart problems can cause clots to form and travel to the brain.

Atherosclerosis – Hardening and narrowing of arteries due to plaque buildup, increasing stroke risk.

Prior Heart Attack – Damage to the heart muscle can lead to clots that may dislodge and block brain arteries [18,19].

Stroke is a fatal and incapacitating illness that affects about 15 million people annually globally. Since most strokes happen to adults over 65, stroke is an aging illness. 1, 2 Compared to younger patients, elderly people have a lower quality of life and a higher mortality rate following a stroke. 3–8 Stroke incidence and outcome are also influenced by sex; women have a larger prevalence of stroke overall because of a longer average lifetime and an increased risk of stroke with aging, even though men have a higher incidence of stroke over the majority of their lives. Eighty-seven percent of strokes in the US are

ischemic strokes, which are brought on by a reduction in blood supply to the brain. Sex and age have an impact on the etiology, epidemiology, and effectiveness of treatment for ischemic stroke, reduced blood supply to brain tissue from a variety of possible reasons, such as small-vessel disease, cardioembolism, and major artery atherosclerosis, causes an ischemic stroke [20,21]. The majority of acute ischemic strokes occur in emergency rooms, although 7–15% of fall strokes happen in hospitals and frequently have special mechanisms, such as cerebral hypoperfusion or paradoxical embolism in immobilized patients. Given that an estimated 1.9 million neurons are destroyed for every minute of ischemia; early detection of stroke is crucial [22,23].

MATERIAL AND METHODS

Study Protocol

It is a prospective and comparative study being conducted for a period of 6 months. Patients who meet the study criteria will be included in the study. The required data will be collected through the patient's interview and their prescriptions. The data obtained shall be analysed to know the prescription pattern in ischemic CVA patients.

Study design

It is a prospective and comparative study.

Study site

The study is to be conducted at the General Medicine Department, Durgabai Deshmukh Hospital, Vidya Nagar, Secunderabad.

Study period

The study is conducted for 6 months from October, 2023 to March, 2024.

Study population

About 54 patients will be included in the study.

Study criteria

Inclusion criteria

- Patients of age 20-90 years are included.
- Patients of either sex [Male and Female] are included.
- Patients who had a previous attack of Stroke [CVA], HTN, DM, CAD are included,
- Patients with thrombotic stroke are also included.

Exclusion criteria

- Patients with Cerebral haemorrhage or any hemorrhagic stroke are excluded.
- Patients with Embolic stroke were excluded.

Statistical analysis

- Software used: SPSS version 24
- P value less than 0.05. Test performed: T- test, Chi-square test.
- The analysis of ABG levels, Complete blood count, Liver/Kidney function test, lipid profile, CT scan, MRI scan was presented in tables as numbers. Comparison between the laboratory parameters and treatment were done [24].

RESULTS

The demographic data and patient characteristics in General medicine department was enrolled in the study. The total number of 54 case reports were analysed and included during the study.

Distribution of subjects based upon age Table 1 shows

The age distribution of a sample population is shown in the table, which divides people into three age groups: those under 60, those between 60 and 70, and those over 70. Of the 54 people in total, 8 [14.8%] are younger than 60, 15 [27.2%] are between 60 and 70, and 31 [57.2%] are older than 70. The sample's mean age is 73.19 years, with a standard deviation of 11.34. This suggests that the majority of the sample is elderly, with a sizable percentage of people over 70. The surveyed group's population is getting older; according to this increasing age, gradual changes occur in the stroke, such as numbness of the face, arm, and leg, and decreased efficiency of the blood circulation. These age-related changes make the stroke more susceptible to damage from irritants and contribute to the development of ischemic CVA.

Table 1: Distribution of Subjects Based On Age

Age groups	Frequency	Percentage
<60years	8	14.8
60-70years	15	27.8
>70 years	31	57.4
Total	54	100
Meanage	73.19[11.34]	

Distribution of subjects based on gender Table- 2 shows

The gender distribution of the 54 subjects is shown in the table; 25 individuals, or 46.3%, are female, and 29 individuals, or 53.7%, are male. Research indicates that although the incidence of stroke may be somewhat higher in men, women typically suffer from more serious consequences and complications, especially in cases of ischemic cerebrovascular accident [stroke]. This is caused by a number of variables, including as hormonal effects, increased obesity and cholesterol rates, and variations in lifestyle choices about food and exercise. Furthermore, symptoms like light-headedness and lack of balance are more common in women, which may cause a delay in diagnosis and treatment. Together, these variables increase women's susceptibility to the long-term consequences of ischemic stroke.

Table 2: Distribution of subjects based on gender

Gender	Frequency	Percentage
Female	25	46.3
Male	29	53.7
Total	54	100

Distribution of subjects based on treatment Table-3 shows

The distribution of therapy types among 54 ischemic CVA [stroke] patients is shown in the table. According to the data, the majority, 77.8% [42 persons], received combined therapy, whilst 22.2% [12 individuals] received monotherapy. This implies that combination therapy is the best course of action for treating ischemic stroke, most likely because it effectively addresses several risk factors at once. Treatment for ischemic stroke frequently involves a multimodal approach that includes blood pressure, cholesterol, lifestyle changes, and antiplatelet or anticoagulant drugs. The increased use of combination therapy emphasizes the necessity of all-encompassing care to enhance patient outcomes and lower the risk of subsequent strokes.

Table 3: Distribution of Subjects Based on Treatment

Type of treatment	Frequency	Percentage
Monotherapy	12	22.2
Combined therapy	42	77.8
Total	54	100

Distribution of subjects based on In-patient and Out-patient Table-4 shows

The distribution of ischemic CVA [stroke] patients by treatment setting is shown in the table. Of the 54 patients, 44 patients, or 81.5%, were hospitalized as inpatients [IP], while 10 patients, or 18.5%, were treated as outpatients [OP]. The greater proportion of inpatient admissions suggests that hospitalization is necessary for intense monitoring, prompt medical attention, and rehabilitation in the majority of ischemic stroke cases. Stabilizing the patient, controlling complications, and avoiding further strokes all depend on this. Conversely, patients who are in the healing phase or have moderate symptoms might benefit from outpatient treatment. The information emphasizes how important hospital-based care is to successfully manage ischemic CVA.

Table 4: Distribution of Subjects Based on In-Patient and Out-Patient

IP/OP	Frequency	Percentage
IP	44	81.5
OP	10	18.5
Total	54	100

Distribution of subjects based on past history Table-5 shows

Among the 54 patients, hypertension [HTN] was the most common comorbidity, affecting 90.7% [49 individuals], followed by diabetes mellitus [DM] at 68.5% [37 individuals]. Other notable conditions included hypothyroidism [18.5%], coronary artery disease [CAD] at 14.8%, and acute kidney injury [AKI] at 5.5%. Additionally, 9.3% [5 individuals] had a history of a previous stroke [old CVA], increasing their risk of recurrent events.

Table 5: Distribution of Subjects Based on Past History

Pasthistory	Frequency	Percentage
DM	37	68.5
HTN	49	90.7
Hypothyroidism	10	18.5
CAD	8	14.8
AKI	3	5.5
Old CVA	5	9.3
Others	18	33.3

Distribution of subjects based on deviation of mean Platelets, Ph, PaCo2, Po2, Hco3 Table-6 shows
Platelets ranged from 0.96 to 13.80, with a mean of 3.36 and a standard deviation of 2.53, indicating variations in platelet counts among patients, which may impact clot formation and stroke risk.
pH values varied between 4.5 and 49.5, with a mean of 7.69 and a standard deviation of 5.85, showing fluctuations in blood acidity, which can influence ischemic stroke outcomes.
$PaCO_2$ [Partial Pressure of Carbon Dioxide] ranged from 10.00 to 58.00, with a mean of 31.46 and a standard deviation of 10.87, reflecting different levels of respiratory efficiency and acid-base balance.
PaO_2 [Partial Pressure of Oxygen] had a minimum of 70.0 and a maximum of 164.0, with a mean of 93.98 and a standard deviation of 13.19, indicating oxygenation status, which is crucial in stroke recovery.
HCO_3 [Bicarbonate Levels] ranged between 0.28 and 35.00, with a mean of 23.38 and a standard deviation of 6.66, which is essential in maintaining acid-base homeostasis.

Table 6: Distribution of Subjects Based on Deviation of Mean Platelet, Ph, PaCo2, Po2, Hco3

Descriptive Statistics				
	Minimum	Maximum	Mean	St. Deviation
PLATELETS	0.96	13.80	3.3600	2.53183
pH	4.500	49.500	7.69148	5.853998
PaCO2	10.00	58.00	31.4676	10.87934
PaO2	70.0	164.0	93.983	13.1952
HCO3	0.28	35.00	23.3876	6.66517

Distribution of subjects based on age by treatment Table-7 shows
The given table represents the distribution of ischemic CVA [stroke] patients based on age groups and type of treatment received [monotherapy vs. combined therapy]. Among the total 54 patients:
In the <40 years' group, 37.5% [3 patients] received monotherapy, while 62.5% [5 patients] were on combined therapy.
In the 40-50 years' group, 40% [6 patients] were on monotherapy, whereas 60% [9 patients] received combined therapy.
In the >50 years' group, only 9.7% [3 patients] received monotherapy, whereas the majority, 90.3% [28 patients], were treated with combined therapy.
The overall data shows that combined therapy was the preferred treatment across all age groups, especially in patients older than 50 years. The P-value of 0.036 suggests a statistically significant association between age and type of treatment, indicating that older patients are more likely to require combined therapy due to increased disease severity and multiple risk factors. This highlights the importance of comprehensive treatment strategies for better management of ischemic CVA in elderly patients.

Table 7: Distribution of Subjects Based on Age by Treatment

Age group	Type of treatment		Total No.[%]	P value
	Monotherapy No.[%]	Combined therapy No.[%]		
<40 years	3[37.5]	5[62.5]	8	0.036
40-50years	6[40]	9[60]	15	
>50 years	3[9.7]	28[90.3]	31	
Total	12[22.2]	42[77.8]	54	

Distribution of subjects based on gender with treatment Table-8 shows
Among the total 54 patients:

- Female patients: 24% [6 individuals] received monotherapy, while 76% [19 individuals] were on combined therapy.
- Male patients: 20.7% [6 individuals] received monotherapy, whereas 79.3% [23 individuals] were treated with combined therapy.

The overall trend indicates that both male and female patients predominantly received combined therapy [77.8% of total cases]. The P-value of 0.770 suggests that there is no statistically significant association between gender and type of treatment.

Table 8: Distribution of Subjects Based on Gender with Treatment

Gender	Type of treatment		Total No.[%]	P value
	Monotherapy No.[%]	Combined therapy No.[%]		
Female	6[24]	19[76]	8	0.770
Male	6[20.7]	23[79.3]	15	
Total	12[22.2]	42[77.8]	31	

Distribution of subjects based on In-patient and Out-patient with treatment Table-9 shows

Among the total 54 patients:

- Inpatients [IP]: 15.9% [7 patients] received monotherapy, while the majority, 84.1% [37 patients], and were on combined therapy.
- Outpatients [OP]: 50% [5 patients] were treated with monotherapy, and the remaining 50% [5 patients] received combined therapy.

The data indicates that inpatients were more likely to receive combined therapy, whereas outpatients had an equal distribution between monotherapy and combined therapy. The P-value of 0.019 suggests a statistically significant association between the treatment setting and the type of treatment. This implies that hospitalized [inpatient] stroke patients likely had more severe conditions, requiring intensive combined therapy, while outpatients, possibly with milder symptoms, were more likely to receive monotherapy.

Table 9: Distribution of Subjects Based on In-Patient and Out-Patient with Treatment

IP/OP	Type of treatment		Total No.[%]	P value
	Monotherapy No.[%]	Combined therapy No.[%]		
IP	7[15.9]	37[84.1]	44	0.019
OP	5[50]	5[50]	10	
Total	12[22.2]	42[77.8]	54	

Distribution of subjects based on age with deviation of mean Platelets, Ph, Paco2, Pao2, Hco3 Table-10 shows

Age: The mean age of patients on monotherapy is 67.83 years, whereas for those on combined therapy, it is 74.71 years. The P-value [0.063] suggests a trend but is not statistically significant. This indicates that older patients are more likely to receive combined therapy.

Platelets: Patients on monotherapy have a mean platelet count of 3.1217, while those on combined therapy have 3.4281. The P-value [0.715] shows no significant difference between the groups.

pH Levels: Monotherapy patients have a mean pH of 6.389, whereas combined therapy patients have 8.06357. The P-value [0.385] suggests no significant difference.

$PaCO_2$: Monotherapy patients have a mean $PaCO_2$ of 32.94, while combined therapy patients have 31.06. The P-value [0.607] shows no significant variation between groups.

PaO_2: Monotherapy patients have a PaO_2 of 92.217, while combined therapy patients have 92.793. The P-value [0.848] shows no significant difference.

HCO_3: Monotherapy patients have a mean of 25.75, whereas combined therapy patients have 22.73. The P-value [0.175] suggests no significant difference.

Table 10: Distribution of Subjects Based on Age with Deviation of Mean Platelets, PH, PACO2, PO2, HCO3

	Treatment	Mean	Std. Deviation	P value
AGE	Monotherapy	67.83	10.895	0.063
	Combined therapy	74.71	11.103	
PLATELETS	Monotherapy	3.1217	2.03818	0.715
	Combined therapy	3.4281	2.67402	
pH	Monotherapy	6.38917	.932040	0.385
	Combined therapy	8.06357	6.589995	
PaCO2	Monotherapy	32.9442	10.40601	0.607
	Combined therapy	31.0663	11.23340	
PaO2	Monotherapy	92.217	7.9920	0.848
	Combined therapy	92.793	9.3908	
HCO3	Monotherapy	25.7500	5.06548	0.175
	Combined therapy	22.7398	7.04428	

Distribution of subjects based on MRI scan Table-11 shows

MRI findings suggest that small vessel strokes and hemiparesis [left/right] are common in these patients. The occipital lobe is the most frequently affected region**,** which may indicate visual disturbances in these patients. The presence of both anterior and posterior circulation strokes highlights the varied vascular involvement in ischemic CVA cases.

Table 11: Distribution of Subjects Based on MRI Scan

MRI findings	**Frequency**
Stroke small vessels	5
Location	
Left hemiparesis	5
Right hemiparesis	5
Acute ischemic stroke	3
Multiple ischemic stroke	4
CVA ischemic stroke	2
Lobes	
Frontal lobe	4
Parietal lobe	3
Occipital lobe	6
Temporal lobe	1
Arteries	2
Veins	1
Anterior	1
Posterior	1

Distribution of subjects based on CT scan Table-12 shows

The occipital lobe is the most frequently affected, which could lead to visual disturbances in stroke patients. The higher frequency of right hemiparesis suggests left-brain dominance in stroke occurrences. Presence of cerebral atrophy, cytotoxic edema, and loss of grey-white differentiation indicates significant brain tissue damage. Posterior circulation strokes were observed, but no anterior circulation strokes were noted, which may indicate a different pattern of ischemic involvement compared to MRI findings.

Table 12: Distribution of Subjects Based on CT Scan

CT findings	Frequency
Stroke infracts	8
Location	
Left hemiparesis	6
Right hemiparesis	11
Acute ischemic stroke	2
Multiple ischemic stroke	2
Lobes	
Frontal lobe	2
Parietal lobe	3
Occipital lobe	7
Temporal lobe	0
Arteries	3
Veins	1
Posterior	1
Anterior	0
Cerebralatrophy	3
Alteredsensorium	2
Post circulation stroke	1
Cytotoxic edema	3
Loss of grey white differentiation	3
Cortical swelling	3

DISCUSSION

In our study a total number of 54 case reports are analyzed and included during the study after considering the inclusion and exclusion criteria. Parameters included in the study are Age, gender, chief complaints, past history, diagnosis, complete blood picture, platelets count, arterial blood gas levels, MRI scan and CT scan and days of treatment. This study of 54 case reports yielded several observations. While a seemingly higher ischemic CVA prevalence was noted in the age groups of the patients vary i.e., [14.8%] of patients belongs to age group less than 60 years, [27.8%] of patients to the age group 60-70 years, [57.4%] belongs to age group more than70 years. Out of 54 [100%] patients, 25 [46.3%] are females and 29 [53.7%] are males, where the collected cases include 44 and 10 inpatient and outpatient cases respectively. Parameters included in the study are PaCo2, Pa02, platelet, HCo3 and pH. Complete Blood Picture status received from the collected case reports as from the OP and IP are having standard deviation of platelets [2.53183], pH [8.53998], PaCo2[10.87934], Pa02[13.1952], Hco3[6.66517] which show edp-value0.036. The collected patients case reports include the treatment regimen of Monotherapy and combined therapy which showed a p-value with age group [0.036], Gender [0.770], IP/OP[0.019]. Simple mean and standard deviation of age by Monotherapy are 67.86 and 10.895 respectively. Simple mean and standard deviation of age by combined therapy are 74.71 and 11.103 respectively which showed p-value of 0.063.

Simple mean and standard deviation of platelets by Monotherapy are 3.1217 and 2.03818 respectively. Simple mean and standard deviation of platelets by combined therapy are 3.4281 and 2.67402 respectively which showed p-value of 0.715. Simple mean and standard deviation of Paco2 by Monotherapy are 32.9442 and 40.10601 respectively. Simple mean and standard deviation of paco2 by combined therapy are 31.0663 and 11.23340 respectively which showed p-value of 0.607. Simple mean and standard deviation of pH by monotherapy are 6.3892 and 9.3204 respectively. Simple mean and standard deviation of pH by combined therapy are 8.06357 and 6.589995 respectively which showed p-value of 0.385. On an average, highest frequency of the CT scan findings is right hemiparesis i.e., 11, and the succeeding highest frequency of the CTscan is stroke in facts i.e.,8. Highest frequency of the MRI scan findings is occipital lobe i.e.,6, and the succeeding highest frequency are stroke small vessels, left hemiparesis, right hemiparesis which of them having an equal number of frequency i.e.,5. By comparing various clinical parameters between combination therapy and monotherapy, it was observed that complete blood picture [CBP] and arterial blood gas levels [ABG] showed a statistically significant difference. Based on all these parameters, our findings suggest that combination therapy provides a potential benefit over monotherapy in the treatment of ischemic CVA, making it a more effective approach.

CONCLUSION

After reviewing the literature and considering our own findings, we have come to the conclusion that combining Clopidogrel is more successful than ecosprin alone in stroke. Anti-inflammatory drugs like ecosprin, when combined with anti-platelet agents like clopidogrel, are the most effective treatment options for cerebrovascular ischemic stroke. For individuals suffering from Acute Ischemic CVA, clopidogrel is often prescribed since it is both an effective and safe anti-platelet medication. During the duration of the trial, no adverse effects were observed. To determine whether there were statistically significant differences between two continuous variables, both the Student t-test and Chi-square test were used. To compare two successive means, repeated measure T-test was used. P-value less than 0.05 was applied. The results show that clopidogrel and together are beneficial in treating ischemic CVA. Results showed that a combined therapy regimen including clopidogrel was more successful and safety in treating ischemic CVA.

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Competing Interest

None

Ethical Approval

The study was approved by the Institutional Ethics committee bearing the registration No. ECR/477/Inst/AP/2013/RR-20

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