

# Comparative Study on the Safety & Efficacy of Aspirin + Rivaroxaban vs Clopidogrel + Apixaban in Deep Vein Thrombosis Patients

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**Abstract—**

**Background:** This research aims to evaluate and contrast the effectiveness and safety profiles of Aspirin with Rivaroxaban (RA) and Clopidogrel with Apixaban (CA) in minimizing thromboembolic risks among patients diagnosed with Deep Vein Thrombosis (DVT).

**Methodology:** A forward-looking observational study was conducted involving 40 participants with confirmed DVT, allocated evenly between two treatment groups. Parameters assessed included recurrence and progression of DVT, bleeding events, death rates, and relevant laboratory markers. Data analysis involved Chi-square and T-tests using SPSS v26.0.

**Findings:** The patients in the CA group had a significantly lower rate of DVT recurrence (5% vs. 45%;  $p= 0.0035$ ) and a tendency towards less disease progression (10% vs. 35%;  $p = 0.051$ ). The incidence of major and mild hemorrhage, as well as fatality rates, did not exhibit significant differences. However, the baseline INR, haemoglobin, and platelet count were significantly different ( $p<0.05$ ) from the normal range.

**Conclusion:** Clopidogrel-apixaban seemed to be more effective in the prevention of DVT recurrence without increasing the risk to the patients' safety compared to Aspirin-Rivaroxaban. This study needs to be followed by broader, randomised trials to confirm these findings.

**Keywords:** Deep Vein Thrombosis, Dual Antithrombotic Therapy, Apixaban, Rivaroxaban, Bleeding Risk

## I. INTRODUCTION

DVT still poses a significant challenge because of its tendency to recur and its complications, which include pulmonary embolism [1]. DOACs such as Rivaroxaban and Apixaban are common; nevertheless, their usage with antiplatelet drugs like Aspirin or Clopidogrel needs more research [2]. This study aimed to assess the comparative efficacy and safety of RA and CA treatments in the treatment of DVT.

## II. MATERIALS AND METHODS

**Study Framework:**

This was an observational prospective study carried out in Malla Reddy Narayana Multispeciality Hospital for one year, from 2023 to 2024.

**Participants:**

Forty patients aged 18 and older diagnosed with DVT were included. Some patients with bleeding disorders, pregnant women, and patients with severe hepatic/renal disorders were not included in the study.[4]

**Treatment Arms:**

CA Group: Apixaban 5mg two times every day + Clopidogrel 75mg once every day  
RA Group: Rivaroxaban 20mg once every day + Aspirin 100mg once every day [5]

**Outcomes Measured:**

Primary: Incidence of DVT recurrence and progression  
Secondary: Bleeding (major/minor), mortality, and laboratory values (INR, platelet, and haemoglobin) [6].

**Data Analysis:**

Descriptive and inferential statistics, encompassing Chi-square and T-tests, were utilized through SPSS v26.0. The significance level was established at  $p<0.05$ . [7]

## III. RESULTS

Both groups exhibited comparable baseline demographics, including age, sex, and comorbidities (e.g., hypertension, diabetes). However, clinical metrics like systolic BP, pulse rate, and INR were elevated in the RA group, along with lower platelet counts and hemoglobin, which may influence the interpretation of efficacy and safety.

Efficacy:

The CA group showed superior effectiveness, with only 5% experiencing a recurrence of DVT in comparison to 45% in the RA group ( $p=0.0035$ ). Despite a decreased disease progression in the CA group (10% vs. 35%), this trend did not achieve statistical significance ( $p=0.051$ ).

Safety:

The incidence of both major and mild bleeding, along with fatality rates, did not exhibit statistical differences across the groups. Nevertheless, the RA cohort experienced slightly more adverse events, indicating a less favorable safety outcome, despite the lack of significance. [tables I & II]

Effectiveness Outcomes: [table IV]

DVT Recurrence: CA: 5% vs. RA: 45% ( $p=0.0035$ ). [fig I]

Progression: CA: 10% vs. RA: 35% ( $p=0.051$ ). [fig II]

Safety Outcomes: [table IV]

Major Bleeding: CA: 10% vs. RA: 25% ( $p=0.20$ ). [fig III]

Minor bleeding: CA: 20% vs. RA: 35% ( $p=0.27$ ) [fig IV]

Mortality: CA: 5% vs. RA: 10% ( $p=1.00$ ). [fig V]

Laboratory Parameters: RA had a higher baseline INR (1.62 vs. 1.21,  $p<0.001$ ) and lower hemoglobin (12.3 vs. 13.7g/dL,  $p=0.001$ ). [table III]

#### IV. DISCUSSION

The superior performance of the CA regimen in minimizing DVT recurrence could be attributed to Apixaban's favorable pharmacodynamics and Clopidogrel's selective platelet inhibition.[8,11] Despite the RA group exhibiting quantitatively elevated bleeding rates, our results align with existing literature on DOACs.[9, 12] Differences in baseline lab values may act as confounding factors, necessitating further adjustment in future studies.[13]

Limitations:

The study's conclusions are constrained by its small sample size, observational nature, and limited follow-up duration.[14]

#### V. CONCLUSION

In patients with DVT, the combination of Clopidogrel and Apixaban demonstrated greater efficacy in preventing recurrence when compared to Aspirin and Rivaroxaban. While no notable safety disparities were identified, the CA regimen exhibited fewer side effects. Larger-scale trials are essential for confirming these preliminary findings and optimizing patient-specific treatment plans.

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