



# Anticoagulation after Cardiovascular event – Outcomes of Patients of who present with Diverticular Bleed

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## Introduction

- 3-15% of individuals with diverticular disease will have acute bleeding. One well documented risk factor is the use of anticoagulation medication.
- Most patients who have a history of cardiovascular diseases such as stroke, pulmonary embolism (PE), deep vein thrombosis (DVT), atrial fibrillation/flutter, and myocardial infarction (MI) are on prolonged courses of anticoagulation.
- Outcome of this population presenting with diverticular bleeding remains poorly understood.

## Objective

This study aims to determine the mortality, length of stay (LOS), and the rate of therapeutic colonoscopy of patients on anticoagulation due to a cardiovascular event who present with diverticular bleeding.

## Methods

- Retrospective analysis of Nationwide Inpatient Sample (NIS) Database from 2001-2013
- Primary diagnosis of diverticulitis and diverticulosis with hemorrhage using ICD-9 Codes
- Patients with a history of stroke, DVT, PE, atrial fibrillation/flutter, and MI were identified using ICD-9 codes.
- A logistic regression analysis with data adjusted for demographics was performed, with a p < 0.005 for the following
  - Death
  - Length of Stay > 3 Days
  - Colonoscopy

## Results

Variable	P-Value	Odds Ratio (95% CI)
<b>Death</b>		
No history	Reference	
Stroke	< 0.001	2.903 (2.649 - 3.180)
Deep Vein Thrombosis/Pulmonary Embolism	< 0.001	4.461 (4.071 - 4.889)
Atrial Fibrillation/Flutter	< 0.001	1.789 (1.721 - 1.860)
Myocardial Infarction	0.000	8.962 (8.492 - 9.457)
<b>Length of stay &gt; 3 Days</b>		
No history	Reference	
Stroke	< 0.001	1.709 (1.643 - 1.777)
Deep Vein Thrombosis/Pulmonary Embolism	0.000	5.174 (4.873 - 5.493)
Atrial Fibrillation/Flutter	0.000	1.652 (1.634 - 1.671)
Myocardial Infarction	0.000	4.861 (4.655 - 5.076)
<b>Colonoscopy</b>		
No history	Reference	
Stroke	< 0.001	0.919 (0.886 - 0.954)
Deep Vein Thrombosis/Pulmonary Embolism	0.002	0.935 (0.896 - 0.976)
Atrial Fibrillation/Flutter	0.336	1.005 (0.995 - 1.016)
Myocardial Infarction	< 0.001	0.799 (0.774 - 0.825)
* Significance level p < 0.001		

- Patients with a history of MI had the highest odds ratio (OR) of death secondary to diverticular bleed at 8.962, while those with stroke had the lowest OR at 2.903.
- Patients with a history of DVT or PE had the highest OR of 4.873 for LOS greater than 3 days, while those with atrial fibrillation/flutter had the lowest OR of 1.634.
- Stroke, DVT/PE, atrial fibrillation/flutter, and myocardial infarction all had a lower OR of undergoing colonoscopy.

## Discussion

- Having a vascular-related comorbidity increased the average LOS and mortality when presenting with diverticular bleeding. Additionally, these comorbidities also decrease the likelihood of undergoing colonoscopy during a diverticular bleeding event.
- This is likely be due to the increased volume and prolonged time of hemorrhage secondary to anticoagulation use.
- Future studies should investigate whether early clipping and embolization in patients with a history of cardiovascular disease decreases mortality and length of stay

## Disclosures

All Authors have no disclosures

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