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12-2019

Timing of anticoagulation therapy in patients admitted with a primary diagnosis of ischemic stroke or transient ischemic attack due to non-valvular atrial fibrillation

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Citation

Martin Diaz, Claudia; Guizan Corrales, Eduardo; De los Rios La Rosa, Felipe; Clarke, Heidi; Kline, Jonatha; Marrero, Sylvia; Gopalani, Radhan; and Belnap, Star, "Timing of anticoagulation therapy in patients admitted with a primary diagnosis of ischemic stroke or transient ischemic attack due to non-valvular atrial fibrillation" (2019). *All Publications*. 3482.

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BACKGROUND

Approximately 13-26% of all acute ischemic strokes are related to atrial fibrillation (AF) and are associated with increased risk of systemic embolism and death. Anticoagulants (AC) are recommended after an ischemic stroke or transient ischemic attack (TIA) secondary to AF; however, the main challenge in current practice is determining the appropriate time of initiation. There is increased risk of both recurrent ischemic stroke and hemorrhagic transformation (HT) within the first two weeks following a primary stroke. According to the American Heart Association/American College of Cardiology (AHA/ACC) Atrial fibrillation guidelines, AC initiation is recommended between 4-14 days after event. Factors contributing to the risk of HT include use of thrombolytics or AC, baseline infarct size, presence of microhemorrhages, and mechanical thrombectomy procedure. This retrospective study will review patients with AF who subsequently developed an ischemic stroke or TIA. Time of AC initiation, use of thrombolytics, in-patient recurrent stroke or HT, and appropriateness of AC utilization will be reviewed.

PURPOSE

To assess the timing of AC initiation in patients presenting with ischemic stroke or TIA due to AF, and to determine potential areas for improvement to facilitate safe and effective use.

METHODS

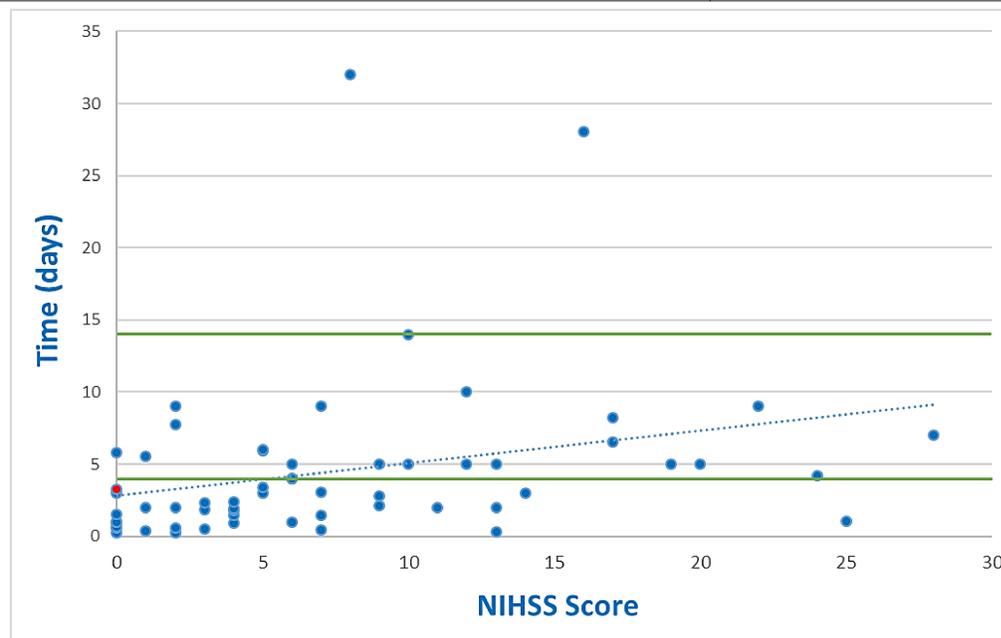
- Single-center, retrospective chart review
 - Deemed as a performance improvement initiative per the BHSF IRB
- Inclusion criteria:
 - Hospitalized adult patients ≥ 18 years of age
 - Acute ischemic stroke or TIA
 - Known or new-onset AF
 - Received AC
- Exclusion criteria:
 - Contraindication to AC (e.g. ongoing bleeding, mechanical heart valve prosthesis, HT)
 - Unable to tolerate CT scan
 - Pregnancy
- Primary outcome:
 - Time to AC initiation in patients post ischemic stroke or TIA due to AF
- Secondary outcomes:
 - Type of AC started
 - Time to AC initiation if the patient received thrombolytic therapy at admission
 - In-patient recurrent stroke or HT
 - Appropriateness of AC on admission and discharge

RESULTS

Patient Characteristics	N = 96
Demographics	
Median age, years (range)	81 (54-89)
Gender—female, n (%)	50 (52)
Race	
Hispanic, n (%)	50 (52)
Whites, n (%)	34 (35)
African American, n (%)	11 (11)
Median length of stay, days (range)	6 (1-89)
AC prescribed prior to admission, n (%)	39 (41)
Stroke classification—ischemic, n (%)	87 (91)

Primary Outcomes

Median time to AC initiation, days (range)	3 (0.21-32)
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Secondary Outcomes	N = 96	AC Initiated	N = 96
Time to AC initiation in pts who received thrombolytic, days	4.8	Apixaban, n (%)	47 (49)
In-patient recurrent stroke or HT, n (%)	3 (3)	Rivaroxaban, n (%)	3 (3)
Appropriateness of AC*		Dabigatran, n (%)	2 (2)
On admission, n (%)	80/96 (83)	Warfarin, n (%)	2 (2)
At discharge, n (%)	81/86 (94)	Enoxaparin, n (%)	1 (1)
Excluded from at discharge analysis		Heparin, n (%)	4 (4)
Hospice	4 (4)	AC initiation deferred to post-discharge, n (%)	37 (39)
Expired	6 (6)		

*Per the AHA/ACC guidelines

DISCUSSION

- 61% of patient were started on AC during hospital course
- Median time to AC initiation in ischemic stroke /TIA was 3 days
- Initiation of AC therapy was planned and/or deferred to post-discharge in 39% of the patients
- Overall, 97% of the patients who were initiated AC therapy received it within 14 days (39% within 4-14 and 58% within 0-4 days)
- Average time to AC in patients who received thrombolytic therapy, underwent thrombectomy, or had a combination of both, was ~5 days
- In-patient symptomatic HT occurred in 3 patients, their average NIHSS score on admission was 11
- There was an 11% increase in the number of patients receiving appropriate AC upon discharge when compared to admission
- Factors contributing to delayed or deferred AC therapy included occurrence of HT, increased bleeding risk, or surgical procedures
- Reasons for inappropriate AC on admission or discharge were incorrect dose and noncompliance to recommended therapy

LIMITATIONS

- Small sample size
- Initiation time of AC prescribed after discharge was not analyzed
- NIHSS score was not always available in the electronic health record
- NIHSS score was used as a surrogate measure for stroke severity

CONCLUSION

Patients were started on AC for secondary stroke prevention approximately four days following primary stroke/TIA. Early onset of AC was not associated with a significantly increased risk of hemorrhage.

DISCLOSURE

All authors of this presentation have nothing to disclose concerning possible financial or personal relationships with commercial entities that may have direct or indirect interest in the subject matter of this presentation.

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