Risk of Bleeding When Concomitantly Exposed to Non-Vitamin K Antagonist Oral Anticoagulants and Other Medications

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Background

- Non-vitamin K antagonist oral anticoagulants (NOACs) are replacing vitamin K anticoagulants due to simplified dosing and monitoring
- However, patients on NOACs are not exempt from bleeding risk
- Potential NOAC drug interactions have been scarcely studied

Objective

- The purpose of this study was to estimate the risk of bleeding in patients on NOAC and potentially interacting drugs

Methods

Study Design and Population

- This observational cohort study utilized Medicare data
- Participants receiving a NOAC from 2017—2020 were included in the analysis

Clinical Outcomes

- Clinical encounter associated with all bleeding (any site) or gastrointestinal (GI) bleeding

Statistical Analyses

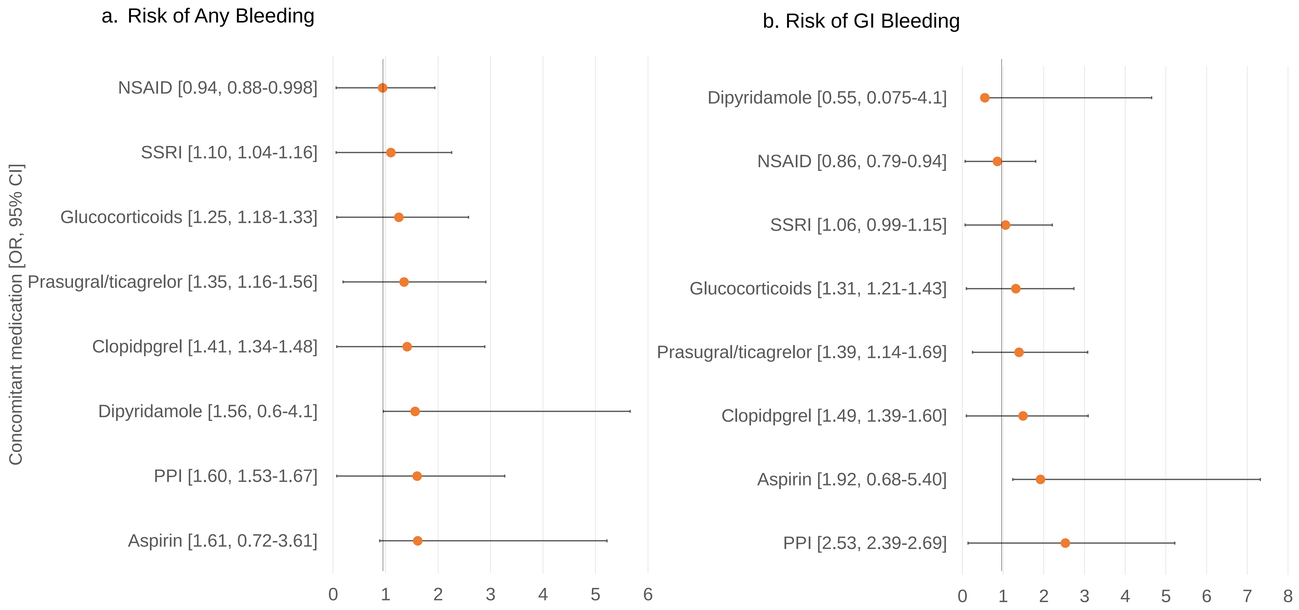
- A concomitant overlapping period while on a NOAC was assessed for: non-steroidal anti-inflammatory drugs (NSAIDS); selective serotonin reuptake inhibitors (SSRI); proton pump inhibitors (PPI); platelet aggregation inhibitors; and glucocorticoids
- Logistic regressions predicting either all bleeding or GI bleeding were conducted

Results

Table 1. Demographic and Clinical Characteristics of Patients Receiving NOAC

	Total N = 102,531	
Demographic Characteristics	**Mean or N**	**SD or %**
Age (years)	77	9.8
Sex (Male)	45,860	45%
Race		
White	90,128	88%
Black	6,788	7%
Asian	1,323	1.30%
Hispanic	1,393	1.40%
North American Native	344	0.30%
Other	1,134	1.10%
Unknown	1,421	1.40%
Clinical Characteristics		
History of GI bleeding	2,908	2.80%
History of other bleeding	3,602	3.50%
Concomitant medications with NOAC overlap		
Aspirin	46	0.04%
Clopidogrel	15,795	15.40%
Dipyridamole	31	0.03%
PPI	38,713	38%
Prasugral/ticagrelor	1,502	1.20%
Glucocorticoid	11,280	11%
SSRI	16,487	16%
NSAID	13,715	13.40%

Figure 1. Bleeding Risk for Patients Concomitantly on NOAC and Other Drugs



CI confidence interval; GI gastrointestinal; NSAIDS Non-Steroidal Anti-Inflammatory Drugs; OR odds ratio; PPI proton pump inhibitors; SSRI Selective serotonin reuptake inhibitors;

- PPI use was correlated with both NSAID (r=0.07, p-value<0.0001) and SSRI use (r=0.09, p-value<0.0001)

Conclusions

✓ Persons on NOACs are at increased risk for overall bleeding and GI bleeding when taking anti-platelets, glucocorticoids, and SSRIs

✓ Use of PPIs may be a confounding medication because it does not increase risk of bleeding but may be prescribed to patients with increased bleeding risk

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