

Medication Related Gastrointestinal Bleeding and the Incidence of Potential Culprit Medications: A Retrospective Study

Maxwell L Baker^{1,2*}, Hannah Leiblich^{1,2}, Maryssa A Paulose¹, Lucas Panagopoulos², Matthew Pegoli², Tim Martin², Carly Schiller², Vijayaprakash Suppiah^{1,3}, Gregory Roberts². ¹School of Pharmacy and Medical Sciences, University of South Australia, Adelaide, SA, Australia, ²SA Pharmacy, Government of South Australia, Adelaide, SA, Australia, ³Australian Centre for Precision Health, University of South Australia, Adelaide, SA, Australia

Background:

250,000¹ drug-related hospital admissions in Australia in 2016/17.

COSTING
\$1.4
BILLION



Studies have shown GI bleeding to be the leading cause of ADR
HOSPITALISATION
and **DEATH**²

Figure 1: The impact of medication related hospital admissions.

Many medications are known to increase the risk of bleeding, including anticoagulants, antiplatelets, NSAIDs, SSRIs & SNRIs, systemic glucocorticoids and bisphosphonates.

Objectives:

- Assess prevalence of hospital admissions associated with drug-related GI bleeding
- Identify incidence of potential culprit medications

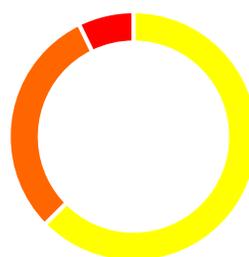
Methods:

Multi-site retrospective study examining admissions between July-December 2017 across three hospitals. GI bleeding admissions were assessed for the concomitant use of potential culprit medications: anti-platelets, anticoagulants, SSRIs/SNRIs, NSAIDs, systemic glucocorticoids and bisphosphonates.

Results:

Of 458 eligible patients admitted for GI bleeding, 296 (65%) were taking at least one of culprit medication. The incidence of culprit medication classes were antiplatelets (53%), anticoagulants (32%), SSRIs/SNRIs (20%), NSAIDs (16%), glucocorticoids (10%) and bisphosphonates (5%). There were 63%, 30% and 7% patients taking 1, 2, or 3+ culprit medications respectively. The incidence of upper and lower GI bleed was even for each class, with the exception of NSAIDs (72.9% upper).

Number of Potential Culprit Medications



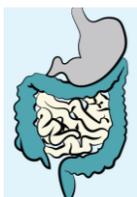
■ 1 ■ 2 ■ 3+

Figure 2: The number of potential culprit medications for patients admitted with gastrointestinal bleeding.

Of particular interest, there were 26 patients receiving aspirin for primary prevention as the only possible culprit medication, with average age 76.2 years and length of stay 3.7 days. The mean cost for these admissions was \$6,956. Extrapolated across South Australia, this comes as an annual cost of approximately \$600,000. On a national scale, this may result in a cost upwards of \$8 million per annum. 46% of patients taking primary prevention aspirin as the only potential culprit medication had it ceased upon discharge.

	Total n (%)	Upper GI n (%)	Lower GI n (%)	Uncertain n (%)
Antiplatelet	156 (52.7)	83 (53.2)	68 (43.6)	5 (3.2)
Anticoagulant	95 (32.1)	38 (40)	49 (51.6)	8 (8.3)
SSRI/SNRI	58 (19.6)	26 (44.8)	31 (53.4)	1 (1.7)
NSAIDs	48 (16.2)	35 (72.9)	10 (20.8)	3 (6.3)
Systemic glucocorticoids	29 (9.8)	11 (37.9)	18 (62.1)	0 (0)
Bisphosphonates	16 (5.4)	7 (43.8)	9 (56.3)	0 (0)

Figure 3: Incidence of potential culprit medications in upper, lower and uncertain sites of gastrointestinal bleeding.



Conclusion:

GI bleeding remains a common cause of drug-related hospital admissions. Clinicians need to be vigilant in considering the indication when prescribing these drugs, especially the use of aspirin for primary prevention.