Comparing Stroke Prevention Therapies in Patients with Atrial Fibrillation Discharged to Aged Care versus the Community.

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Background

Stroke prevention is an important consideration in atrial fibrillation (AF) and inappropriate management can lead to an increased risk of embolic events in this patient cohort. The Australian Heart Foundation AF guidelines recommend the use of the CHA_2DS_2VA (genderless CHA_2DS_2VASc) score to determine stroke risk.[1] It is recommended that patients with scores ≥2 are prescribed oral anticoagulation (OAC). Furthermore, aspirin monotherapy is not recommended as thromboprophylaxis due to similar bleeding risks with OACs and the superior efficacy of OAC therapy in preventing thromboembolic events.[1]

A 2016 review of Residential Medication Management Reviews (RMMRs) identified a reduced use of anticoagulants in residential aged care facility (RACF) residents, despite the residents on average being older and at higher risk of thromboembolic events. An increased use of antiplatelet monotherapy was also observed.[5] There is little data, however, comparing OAC prescribing between patients discharged to RACF versus the community.

Aim

This audit aims to compare stroke prevention therapies for atrial fibrillation in patients either discharged to the community or to RACFs and to identify gaps in prescribing practices.

Method

1. Demographics and discharge diagnoses for AF patients (ICD-10-AM code: I48) between January 2013 and December 2017 were extracted and linked to validated discharge prescription data from the Electronic Medical Record. Patient covariates, risk factors and therapy were compared between the two discharge locations (Tables 1 and 2)

2. Patients were separated into four different groups based on their stroke and bleeding risks and compared between discharge destinations using validated risk assessment tools.

3. A time series of prescribing trends from January 2013 to December 2017 in high stroke risk patients was analysed and presented to identify rates of OAC and aspirin therapies over the years.

Risk assessment tools:
CHA_2DS_2VA (genderless CHA_2DS_2VASc) score: Patients with scores ≥2 were classified as having a 'high stroke risk.'[1]

HAS-BLED score: Patients with scores ≥3 were classified as having a 'high bleeding risk.'[7]

Patient groups:
- High stroke risk/low bleeding risk
- High stroke risk/high bleeding risk
- Low stroke risk/low bleeding risk
- Low stroke risk/high bleeding risk

Inclusion criteria:
-All patients discharged from the hospital to either aged care or the community with a current or previously documented history of AF.

Exclusion Criteria:
-Patients who have been transferred to another destination outside of RACFs or the community (i.e. another hospital, inpatient rehab, mental health facility).
-Patients under the age of 18 years.

Results

Table 1:Patient Demographics & Characteristics

	RACF N=363	Community N=3973
Gender n(%)		
Male	129 (36)	1971 (50)
Female	234 (64)	2002 (50)
Age		
Median (IQR)	87 (83-91)	78 (69-85)
Age≥65 (%)	359 (98.9)	3288 (82.8)
Comorbidities n(%)		
CCF	109 (30.0)	886 (22.3)
Stroke/TIA	44 (12.1)	329 (8.3)
Diabetes	87 (24.0)	853 (21.5)
Hypertension	143 (39.4)	1573 (39.6)
MI	27 (7.4)	290 (7.3)
Depression	48 (13.2)	160 (4.0)
GI/Intracranial bleed	14 (3.9)	80 (2.0)
Renal disease	94 (25.9)	896 (22.6)
IHD	43 (11.8)	503 (12.7)
Smoking	49 (13.5)	1244 (31.3)
Medications n(%)		
NSAIDs	6 (1.7)	106 (2.7)
Antidepressants	126 (34.7)	663 (16.7)
Antiplatelet therapy[1]	20 (5.5)	543 (13.7)

NB
1. Antiplatelet therapy is described as: any concurrent antiplatelet therapy excluding aspirin as monotherapy

IQR= Interquartile range, S.D= standard deviations, CCF= Congestive cardiac failure, MI= Myocardial infarction, TIA=transient ischaemic attack, IHD=Ischaemic heart disease, NSAIDs=Non-steroidal anti-inflammatory drugs

Table 2: Stroke prevention, CHA_2DS_2VA & HAS-BLED scores

	RACF N=363	Community N=3973
Stroke Prevention therapy n(%)		
No therapy	101 (27.8)	840 (21.1)
Aspirin monotherapy	166 (45.7)	1055 (26.6)
Oral anticoagulation	96 (26.4)	2078 (52.3)
-Warfarin	45 (12.4)	756 (19)
-DOAC	51 (14.0)	1322 (33.3)
CHA_2DS_2VA score		
Median (IQR)	2 (2-3)	2 (1-3)
HAS-BLED score		
Median (IQR)	2 (2-3)	2 (1-3)

Figure 1: Stroke Prevention Therapy according to stroke & bleeding risks: Community N=3973)

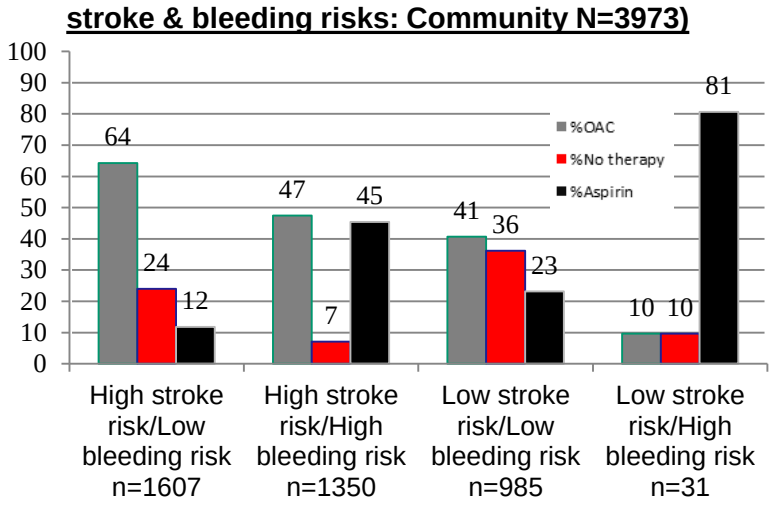


Figure 2: Stroke prevention therapy according to stroke & bleeding risks: RACF (N=363)

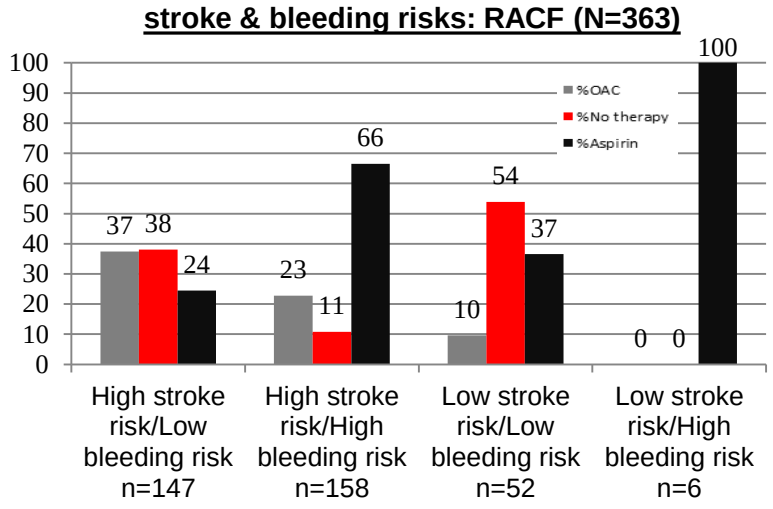
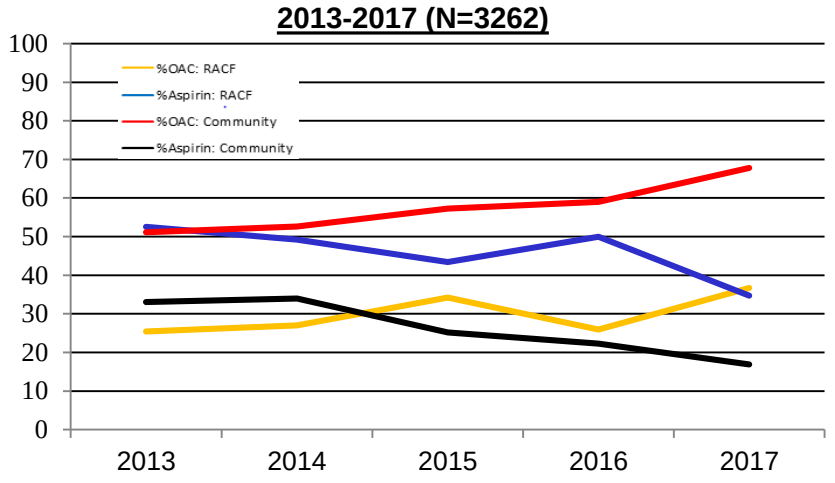


Figure 3: Therapy in high stroke risk patients from 2013-2017 (N=3262)



Discussion:

Table 1 shows that RACF residents were generally older and had higher rates of CCF, stroke and diabetes. RACF residents also had a notably high rate of antidepressant prescribing (34.7%). This is important to note as some antidepressants can increase the risk of bleeding.

Table 2 shows that the overall CHA_2DS_2VA and HAS-BLED scores were similar between the two patient groups. However there was reduced anticoagulation in the RACF group (26.4%) versus the community (52.3%). In contrast, aspirin monotherapy had a higher prescribing rate in RACFs (45.7%) compared to the community (26.6%). This is a concerning observation as aspirin monotherapy is not recommended regardless of stroke risk.

When considering patients with a high stroke risk; bleeding risks seemed to have an impact on treatment choice. Figures 1 & 2 show the proportions of patients receiving different therapies based on stroke/bleeding risks and discharge locations. Patients with a high bleeding risk in either patient cohort had a high proportion of aspirin monotherapy regardless of stroke risk. Particularly In RACF patients with a high stroke/high bleeding risk, aspirin monotherapy tripled OAC therapy.

Furthermore, RACF residents with a high stroke/low bleeding risk, 37.4% received OAC while 24.5% received aspirin. In contrast, 64.3% of high stroke/low bleeding risk patients in the community received OAC. This seems to indicate a reluctance to prescribe OAC in RACF patients, regardless of bleeding risk.

Figure 3 depicts prescribing data in high-stroke risk patients from the period of January 2013 to December 2017. There is an upwards trend in OAC and a downwards trend in aspirin therapy in the community cohort during this period. In RACF residents however, OAC prescribing has been lower than aspirin for every year except for 2017, where the rates of both are relatively equal. This seems to support the notion that patients in RACF are under-prescribed OAC, even if they are at a high stroke risk.

Conclusions/Implications:

This audit identified that RACF patients are over-prescribed aspirin and under-prescribed OAC, especially when bleeding risks are increased.

The results imply that prescribing practices in high stroke risk patients may have improved over the last five years in the community. This trend is not as distinct in RACF patients.

Future studies should utilise the data extracted from this audit to determine appropriateness of therapy in this population to guide prescriber education and trigger more frequent reviews of therapy.

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NB: Due to rounding, data presented throughout this poster may not add up precisely to the totals provided and percentages may not precisely reflect the absolute figures.

References:
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