

NOACs Now Mainstream for the Use of Anticoagulation in Non-Valvular Atrial Fibrillation in Australia



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Received 13 August 2017; received in revised form 17 February 2018; accepted 7 March 2018; online published-ahead-of-print 22 March 2018

The management of stroke risk in patients with non-valvular atrial fibrillation has changed over the past few years. This change has occurred due to the introduction of novel oral anticoagulants (NOACs) such as apixaban, rivaroxaban and dabigatran for the management of non-valvular atrial fibrillation. These agents have shown comparable stroke risk reduction to warfarin in large international multicentre trials [1–3]. This has changed the clinical practice of many treating physicians since their introduction from 2011 to 2013.

The purpose of this review was to highlight the now mainstream use of NOAC administration in preference to warfarin, by comparing the trends in the number of prescriptions filled since all three forms of oral anti-coagulant became available in 2013.

These agents are being increasingly prescribed due to their ease of use compared to warfarin, which not only requires ongoing monitoring due to narrow therapeutic range but also has many drug and food interactions. Since November 2015, NOACs have become the mainstream choice for anticoagulation in atrial fibrillation likely given their ease of use compared to warfarin. The use of each anticoagulant remains divergent with the use of warfarin continuing to decrease.

Keywords

Anticoagulation • Non-valvular atrial fibrillation • NOACs • Warfarin • Apixaban • Rivaroxaban • Dabigatran • Prescribing

Methods and Materials

In this study we reviewed the latest available statistical data at the time of submission collected by the Pharmaceutical Benefits Scheme (PBS).

This was specific for the number of scripts filled under the PBS/Repatriation PBS (RPBS) using the item codes designated for non-valvular atrial fibrillation for each NOAC.

Respectively these were, apixaban (2735Y and 2744K), rivaroxaban (2691P, 2268J*) and dabigatran (2769R, 2753X). These were then directly compared to number of scripts filled for warfarin over the same time period which was from September 2013 to May 2017. This time period was chosen as this is when all three NOACs were available through the PBS.

Month-to-month prescriptions filled were then directly compared between all NOACs (total NOACs) versus warfarin. Linear trend modelling was used to observe general trends in data over the data collection time period.

*Rivaroxaban item number 2268J also includes indications for deep vein thrombosis and pulmonary embolism.

Results

The use of NOACs to manage stroke risk in atrial fibrillation has become the mainstream choice in preference to warfarin when comparing month-to-month PBS prescriptions since September 2013 (Figure 1). Linear trend

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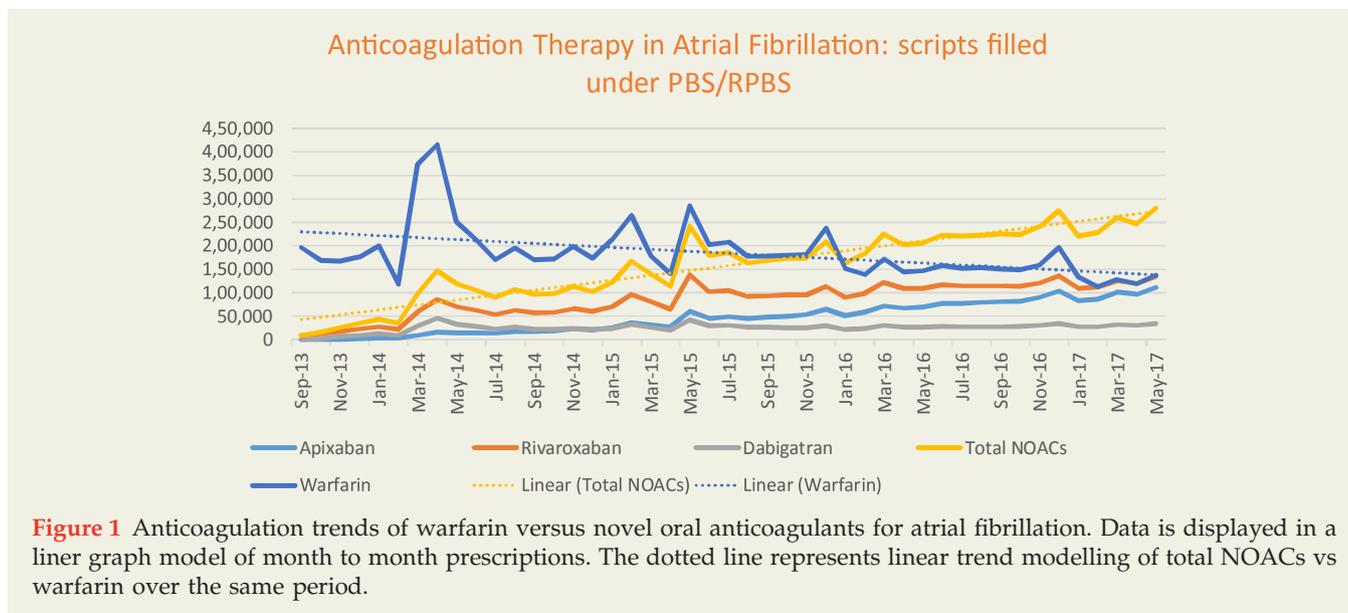


Figure 1 Anticoagulation trends of warfarin versus novel oral anticoagulants for atrial fibrillation. Data is displayed in a liner graph model of month to month prescriptions. The dotted line represents linear trend modelling of total NOACs vs warfarin over the same period.

modelling of NOACs compared to warfarin indicates a clear divergence in prescription trends with NOACs consistently becoming increasingly prescribed for atrial fibrillation.

From September 2013 to May 2017 there has been a significant increase in total monthly prescriptions of NOAC use by over 2900% from 9,499 to 281,217 scripts combined and for the same months warfarin scripts decreased by almost 30% from 196,696 to 137,976 (Table 1).

Table 1 Number of quarterly scripts filled between all PBS listed NOACs and warfarin in Australia from September 2013 to May 2017.

Quarter	Apixaban	Rivaroxaban	Dabigatran	Total NOACs	Warfarin
Q3-13	50	9,155	294	9,499	196,696
Q4-13	5,246	53,226	53,226	78,337	513,879
Q1-14	16,776	108,804	52,368	177,948	692,463
Q2-14	46,928	218,815	107,598	373,341	878,726
Q3-14	48,121	173,569	72,678	294,368	538,051
Q4-14	61,809	185,238	68,009	315,056	543,790
Q1-15	96,422	248,570	83,989	428,981	656,009
Q2-15	134,117	307,583	93,860	535,560	628,481
Q3-15	143,363	291,159	82,927	517,449	564,006
Q4-15	169,085	305,390	82,170	556,645	599,119
Q1-16	183,515	310,784	77,676	571,975	462,385
Q2-16	214,712	335,843	81,291	631,846	450,004
Q3-16	238,556	345,144	83,616	667,316	456,349
Q4-16	275,574	370,271	94,266	740,111	504,873
Q1-17	271,646	348,783	88,151	708,580	374,627
Q2-17	208,194	254,798	65,422	528,414	257,470

Bold values are total numbers of NOACs versus Warfarin.

In May 2017 NOACs were used by 67.09% of patients with non-valvular atrial fibrillation compared to just 4.61% in September 2013. Conversely, warfarin was used by only 32.91% of these patients in May 2017 compared to 95.39% in September 2013. This apparent cross-over occurred in November 2015.

Discussion

Current prescribing trends in Australia show that NOACs are now the more popular medication used to manage non-valvular atrial fibrillation compared to warfarin. NOACs are used by Australians at a ratio of 2:1, despite apixaban and rivaroxaban not having reversal agents on the market.

Comparison of similar international studies reveal Australian prescribing trends have been similar in their adoption of NOACs [4]. Both apixaban and rivaroxaban have shown a steady increase in prescriptions since their release to the market. If current trends continue, NOACs will overtake warfarin as the main anticoagulation of choice for atrial fibrillation in Australia.

The data comparison does include warfarin prescription for patients with non-valvular atrial fibrillation, valvular atrial fibrillation, pulmonary embolism and deep vein thrombosis; and the use of rivaroxaban for non-valvular atrial fibrillation, deep vein thrombosis and pulmonary embolism.

Conclusion

Novel oral anticoagulants have become the mainstream choice for anticoagulation in atrial fibrillation likely given their ease of use compared to warfarin. The use of each anticoagulant remains divergent with the use of warfarin continuing to decrease. Australians with non-valvular atrial fibrillation are currently using NOACs in preference to warfarin at a ratio of 2:1.

Appendix A. Number of monthly scripts filled between NOACs and warfarin in Australia.

Month	Apixaban	Rivaroxaban	Dabigatran	Total NOACs	Warfarin
Sep-13	50	9,155	294	9,499	196,696
Oct-13	806	12,510	3,100	16,416	169,700
Nov-13	1,698	17,969	6,955	26,622	167,778
Dec-13	2,742	22,747	9,810	35,299	176,401
Jan-14	3,837	27,397	12,686	43,920	199,809
Feb-14	3,463	22,191	10,040	35,694	118,839
Mar-14	9,476	59,216	29,642	98,334	373,815
Apr-14	16,397	85,420	45,406	147,223	415,271
May-14	15,501	70,805	33,330	119,636	250,708
Jun-14	15,030	62,590	28,862	106,482	212,747
Jul-14	13,749	53,339	23,268	90,356	170,848
Aug-14	17,227	63,381	27,010	107,618	196,046
Sep-14	17,145	56,849	22,400	96,394	171,157
Oct-14	18,134	58,360	21,860	98,354	171,345
Nov-14	22,904	66,669	24,657	114,230	198,503
Dec-14	20,771	60,209	21,492	102,472	173,942
Jan-15	27,071	70,442	23,912	121,425	212,586
Feb-15	36,872	96,890	33,688	167,450	264,943
Mar-15	32,479	81,238	26,389	140,106	178,480
Apr-15	27,565	65,468	21,175	114,208	141,500
May-15	60,201	139,362	42,592	242,155	285,048
Jun-15	46,351	102,753	30,093	179,197	201,933
Jul-15	49,527	105,047	30,807	185,381	208,427
Aug-15	45,692	92,178	26,110	163,980	177,327
Sep-15	48,144	93,934	26,010	168,088	178,252
Oct-15	50,837	96,196	25,846	172,879	179,304
Nov-15	53,330	95,249	25,887	174,466	182,336
Dec-15	64,918	113,945	30,437	209,300	237,479

Appendix A. (continued).

Month	Apixaban	Rivaroxaban	Dabigatran	Total NOACs	Warfarin
Jan-16	51,961	90,234	22,130	164,325	151,620
Feb-16	59,107	99,099	24,840	183,046	138,502
Mar-16	72,447	121,451	30,706	224,604	172,263
Apr-16	67,688	108,926	26,217	202,831	144,952
May-16	69,886	109,717	26,462	206,065	146,690
Jun-16	77,138	117,200	28,612	222,950	158,362
Jul-16	77,815	114,741	27,782	220,338	152,742
Aug-16	79,664	115,091	27,569	222,324	153,844
Sep-16	81,077	115,312	28,265	224,654	149,763
Oct-16	82,153	113,791	28,437	224,381	149,359
Nov-16	89,731	120,376	30,753	240,860	159,209
Dec-16	103,690	136,104	35,076	274,870	196,305
Jan-17	83,518	109,193	27,732	220,443	133,289
Feb-17	86,579	113,191	28,218	227,988	112,659
Mar-17	101,549	126,399	32,201	260,149	128,679
Apr-17	96,917	119,701	30,579	247,197	119,494
May-17	111,277	135,097	34,843	281,217	137,976

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