Retrospective longitudinal study of patients and prescriber characteristics associated with new DOAC prescriptions in a CCG without restrictions to DOAC use

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Direct oral anticoagulants (DOACs) uptake for stroke prevention in atrial fibrillation has been slow.[1] This study aimed to profile the prescribing of DOACs over three years to identify factors associated with DOAC prescribing in a Clinical Commissioning Group (CCG) without restrictions to DOACs use. The objectives were to identify:

- Characteristics of patients prescribed oral anticoagulant (OAC) in a sample of general practices;
- Who initiated the prescribing of OAC;
- Recorded reasons for prescribing a DOAC rather than warfarin;

This retrospective longitudinal study of OAC prescribing in adults used anonymous data submitted from nine general practices in Bradford, England. Ethical approval was granted by the University of Bradford. Practice pharmacists extracted anonymised data from the TPP-SystemOne clinical software by running pre-defined searches to identify new OAC prescriptions. Data was descriptively analysed with Excel and SPSS.

The results are summarised in the Table 1. The proportion of DOAC prescribing significantly increased over time ($x^2(2)=63.538$, $p<0.01$). There were no statistically significant differences between age, gender and type of OAC and who initiated the OAC. However, the majority of DOACs were initiated in the community showing general practitioners' increasing confidence in DOAC prescribing. Documentation of reasons for choosing a particular OAC was poor and almost non-existent for warfarin. Patient choice was increasingly stated as a reason to prescribe a DOAC indicating greater patient involvement in a shared decision-making.

One third of patients were switched from aspirin to an OAC over time and they were statistically more likely to be initiated on warfarin than a DOAC ($x^2(1)=13.923$, $p<0.01$). This observation was significant only in the community initiated prescribing ($x^2(1)=12.693$, $p<0.01$). The effect decreased over time. Changing between OAC over the study period was more common for patients prescribed warfarin (29%) than a DOAC (4%). The main reason for switching from warfarin was inadequate control of time in the therapeutic range.

Results of this study will be used to inform a larger study on the organisational barriers to DOACs prescribing. The main limitation was inclusion of surgeries with practice pharmacists only. This work was made possible with unrestricted educational grant from Bayer Pharmaceuticals.

	1/4/2012-31/3/2013 (n=140)		1/4/2013-31/3/2014 (n=138)		1/4/2014-31/3/2015 (n=146)	
	Warfarin (n=120)	DOACs (n=20)	Warfarin (n=84)	DOACs (n=54)	Warfarin (n=58)	DOACs (n=88)
Age (years), mean (SD)	76 (11)	77 (10)	76 (10)	76 (10)	76 (10)	76 (10)
<66 (number of cases)	18	2	12	7	15	9
66-75 (number of cases)	27	6	26	15	18	20
>75 (number of cases)	75	12	46	32	25	59
Sex, male	56%	65%	56%	59%	45%	45%
OAC split	86%	14%	61%	39%	40%	60%
Initiator						
Community	77%	80%	66%	74%	66%	83%
Hospital	21%	15%	32%	26%	34%	17%
Not stated	2%	5%	2%	0%	0%	0%
Started as 1st line	85%	9%	60%	23%	38%	40%
Reason for choosing as 1st line:						
Patient choice	1%	18%	1%	44%	2%	46%
Not stated	99%	73%	99%	56%	98%	45%
Other*	N/A	9%	N/A	0%	N/A	9%
Switching (number of cases)						
Aspirin to warfarin or DOAC	59	9	33	16	17	17
Warfarin to DOAC	N/A	8	N/A	27	N/A	40
DOAC to warfarin	0	N/A	5	N/A	2	N/A

Table 1. Summary of the baseline characteristic of patients newly prescribed OAC in Bradford, from 1/4/2012 to 31/3/2015.
*Other: can't attend warfarin clinic, needle-stick phobia, or drug interaction with warfarin.

1. ABPI SAFI. One year on- Why are patients still having unnecessary AF-related strokes? 2016. http://www.abpi.org.uk/our-work/library/medical-disease/Documents/SAFI_One_Year_On.pdf (accessed 6 September 2017).