

# Anticoagulation treatment patterns of venous thromboembolism in GARFIELD-VTE

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## BACKGROUND

- Parenteral anticoagulation overlapping with vitamin K antagonists (VKAs) has been the cornerstone of venous thromboembolism (VTE) treatment.<sup>1,2</sup> With the recent introduction of four direct oral anticoagulants (DOACs), apixaban, dabigatran, edoxaban, and rivaroxaban, physicians now have more choices of treatments for VTE.<sup>3-5</sup>
- The Global Anticoagulant Registry in the FIELD – Venous Thromboembolism (GARFIELD-VTE; NCT02155491) is a global, prospective, observational study of patients requiring treatment for acute VTE.<sup>6</sup>
- GARFIELD-VTE observes real-world treatment practices and provides a contemporary snapshot of current VTE treatment among patients recruited in two consecutive cohorts between May 2014 and January 2017.

## PURPOSE

- The purpose of this poster is to describe the acute anticoagulation (AC) therapy of patients with a confirmed diagnosis of VTE, who were treated with AC therapy only.

## METHODS

- To be eligible for recruitment into GARFIELD-VTE, patients were required to be 18 years of age or older, with a confirmed diagnosis of acute VTE (either as a primary or recurrent event) within 30 days of entry into the study, and being managed for VTE.
- The patients provided written informed consent. The study was approved by the individual ethics committees of each participating site. Data were captured within  $\pm$  30 days of a confirmed diagnosis of VTE.

## STATISTICAL ANALYSES

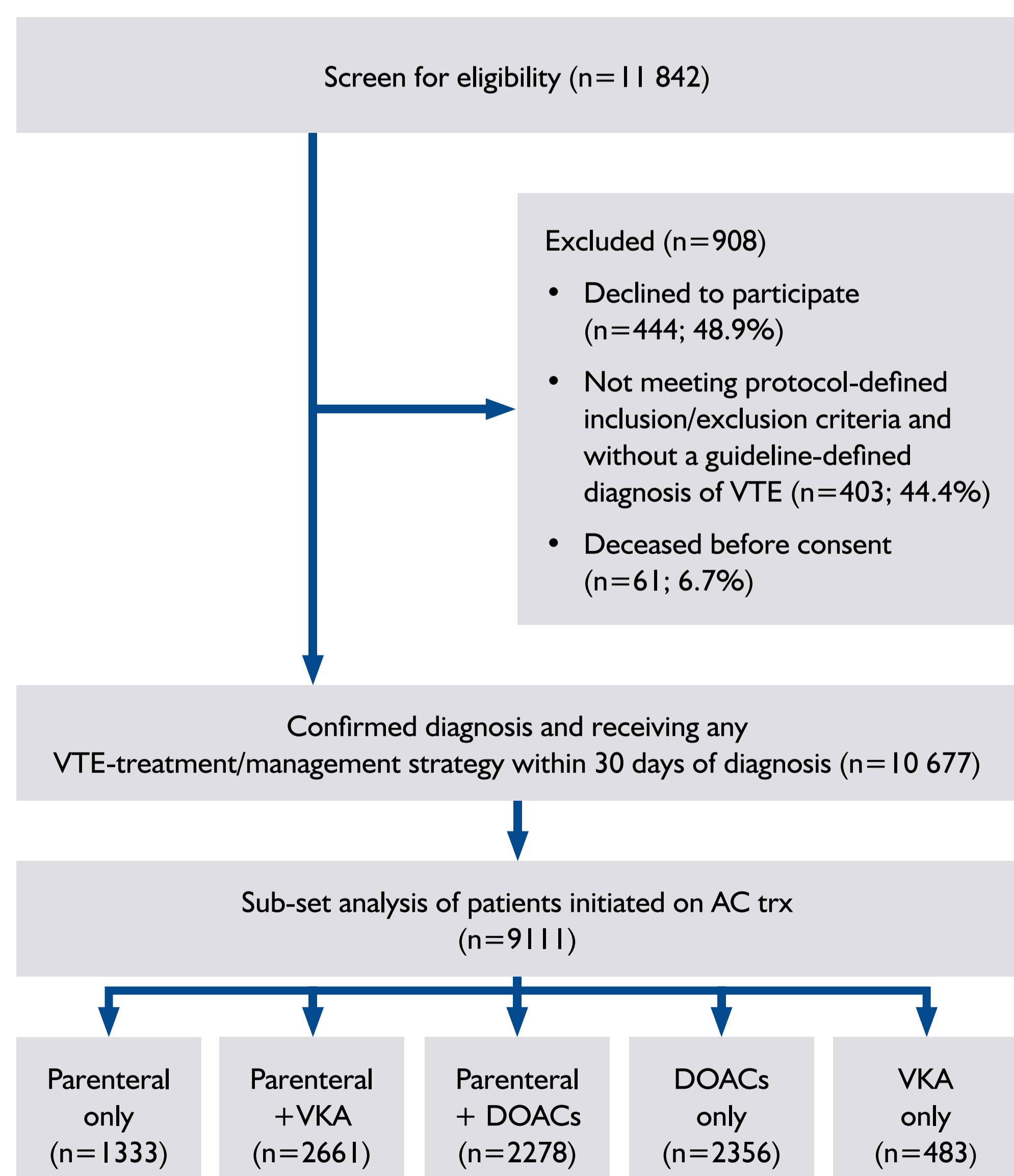
- Patient characteristics were analysed for those treated with: 1. parenteral therapy only, 2. parenteral therapy + VKA, 3. parenteral therapy + DOACs, 4. DOACs only and 5. VKA only. Patients treated with other patterns of AC therapy and/or with thrombolytics or other invasive procedures were excluded from this analysis.
- Differences in the patterns of care were analysed for patients stratified by VTE site, year of enrolment, geographic region and special patient populations (active cancer, history of cancer, pregnancy, recent bleed or anaemia and renal impairment)

## RESULTS

### STUDY POPULATION

- Between May 2014 and January 2017, 11 842 patients from 419 sites in 28 countries were screened and 10 677 eligible patients with a confirmed diagnosis of VTE were included in the study population. Of these patients, a subset of 9111 patients who were treated with any one of the following patterns of AC therapy alone within  $\pm$  30 days of diagnosis were included in the analysis: 1. parenteral therapy only, 2. parenteral therapy + VKA, 3. parenteral therapy + DOACs, 4. DOACs only and 5. VKA only (Figure 1). One hundred and fifty-seven patients on other patterns of AC treatment were excluded.

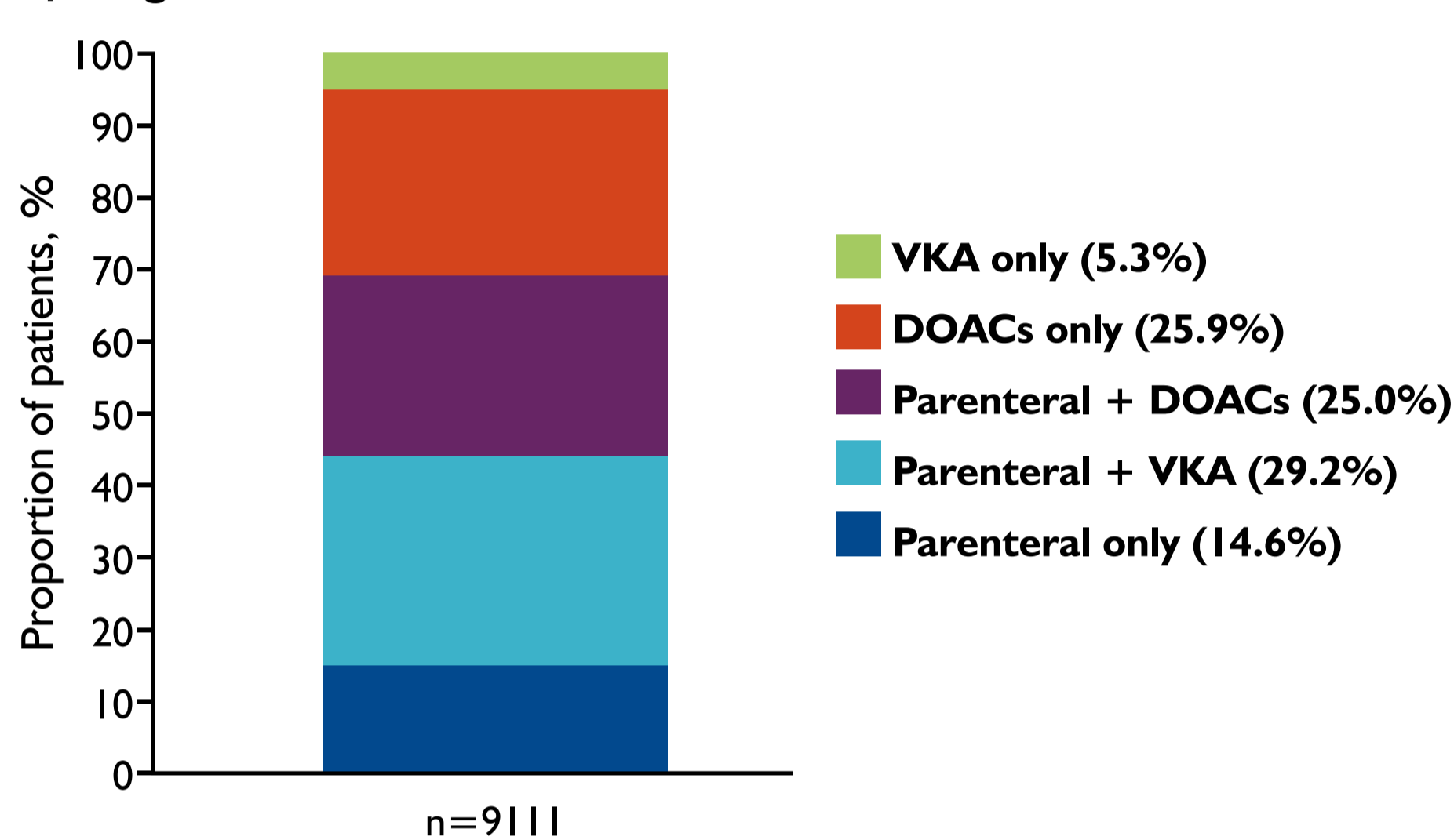
Figure 1. Study population



## TREATMENT PATTERNS WITHIN $\pm$ 30 DAYS OF DIAGNOSIS

- Overall, 6272 (68.8%) patients received initial parenteral AC therapy within 30 days of diagnosis; mostly low molecular weight heparin [LMWH] (83.8%) followed by unfractionated heparin [UFH] (13.2%) and fondaparinux (3.0%).
- Patients received parenteral AC therapy either alone (n=1333; 14.6%) or as a bridge to VKA (n=2661; 29.2%) or prior to switching to a DOAC (n=2278; 25.0%).
- The mean duration of parenteral therapy before bridge/switch to oral AC was 6.1 days ( $\pm$  standard deviation of 26.5 days).
- One in four patients received DOACs alone (n=2356; 25.9%). A minority of patients received VKA alone (n=483; 5.3%) (Figure 2).

Figure 2. Treatment patterns of AC therapy within  $\pm$  30 days of diagnosis



**Parenteral AC:** Unfractionated heparin, Low Molecular Weight Heparin (LMWH), Fondaparinux  
**Direct Oral AC (DOAC):** Dabigatran, Rivaroxaban, Apixaban, Edoxaban  
**Vitamin K Antagonist (VKA):** Warfarin, Phenprocoumon, Acenocoumarol

## ANALYSES OF TREATMENT PATTERNS BY PATIENTS' DEMOGRAPHICS, SITE OF VTE, DATE OF ENROLMENT, SPECIAL POPULATIONS

- Differences in therapeutic approach were observed by geographical region (Table 1).
  - Of note, VKA alone was more frequently prescribed in countries outside Asia, Europe and North America (Table 1).
- AC treatment was similar in patients with deep-vein thrombosis (DVT) alone or pulmonary embolism with or without DVT; however, a greater proportion of patients with pulmonary embolism with or without DVT received parenteral AC + DOACs; and a greater proportion of patients with DVT only received DOACs only (Table 2).
- Prescribing of DOACs increased in patients following a confirmed diagnosis of VTE (Figure 3). A small increase in DOACs prescribing was observed in patients recruited during 2016-2017 vs 2014-2015 (Figure 4).
- As recommended by current guidelines, patients with active cancer were more likely to be treated with a parenteral AC alone followed by DOACs with or without heparin lead-in taken together. Although the percentage of patients on parenteral AC alone was highest in pregnant patients, there was a broad range of AC therapies in pregnancy not supported by any guidelines (Table 3).

Table 1. Analyses of treatment patterns by patient demographics and region

	Parenteral only (n=1333)	Parenteral + VKA (n=2661)	Parenteral + DOACs (n=2278)	DOACs only (n=2356)	VKA only (n=483)
<b>Male, n (%)</b>	609 (45.7)	1365 (51.3)	1172 (51.4)	1199 (50.9)	238 (49.3)
<b>Age at diagnosis, yr median (IQR)</b>	62.4 (48.7 to 72.8)	59.5 (45.6 to 70.7)	60.5 (46.9 to 71.9)	60.3 (46.5 to 71.8)	57.3 (40.0 to 71.9)
<b>BMI, kg m<sup>-2</sup> median (IQR)</b>	25.9 (22.8 to 30.1)	27.8 (24.4 to 32.1)	27.6 (24.5 to 31.5)	27.3 (24.2 to 31.6)	28.1 (24.2 to 32.4)
<b>Region, n (%)<sup>1</sup></b>					
Europe (n=5333)	757 (14.2)	1504 (28.2)	1486 (27.9)	1402 (26.3)	184 (3.5)
Asia (n=1395)	341 (24.4)	327 (23.4)	250 (17.9)	411 (29.5)	66 (4.7)
North America (n=852)	108 (12.7)	269 (31.6)	311 (36.5)	143 (16.8)	21 (2.5)
Other (n=1531) <sup>2</sup>	127 (8.3)	561 (36.6)	231 (15.1)	400 (26.1)	212 (13.8)

<sup>1</sup>Percentages are calculated as a proportion of patients according to their race

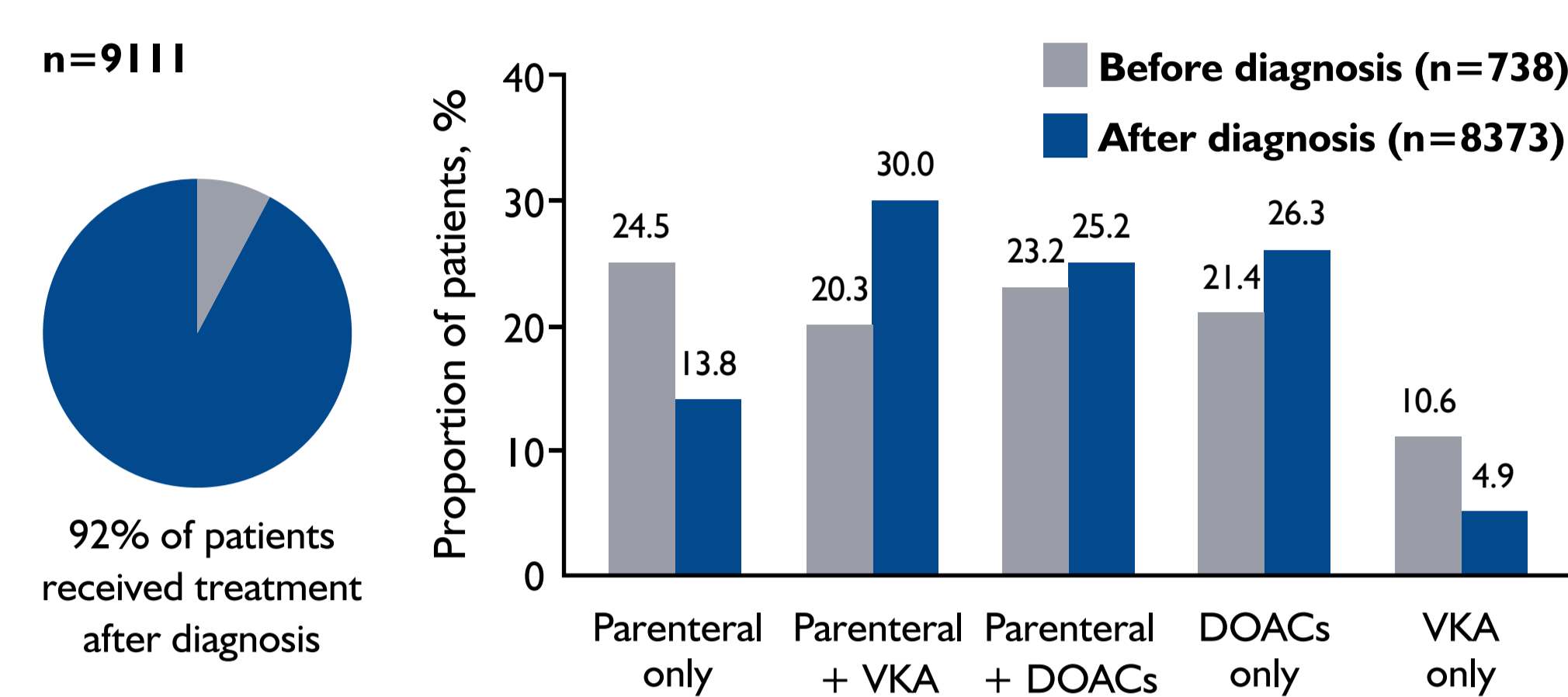
<sup>2</sup>Other is defined as: Argentina, Australia, Brazil, Egypt, Mexico, South Africa and United Arab Emirates  
 BMI = Body mass index

Table 2. Site of VTE

	Parenteral alone	Parenteral + VKA	Parenteral + DOACs	DOACs only	VKA alone
<b>DVT alone* (n=5643)</b>	883 (15.6)	1624 (28.8)	1115 (19.8)	1693 (30.0)	328 (5.8)
<b>PE <math>\pm</math> DVT (n=3468)</b>	450 (13.0)	1037 (29.9)	1163 (33.5)	663 (19.1)	155 (4.5)

\*Including upper limb (arm) or lower limb, vena cava and other atypical site

Figure 3. Treatment patterns of AC therapy before and after confirmed diagnosis of VTE



**Before diagnosis:** Day -1 to -30 before diagnosis of VTE  
**After diagnosis:** Day 0 to 30 after confirmed diagnosis of VTE

Figure 4. Treatment patterns by years of enrolment

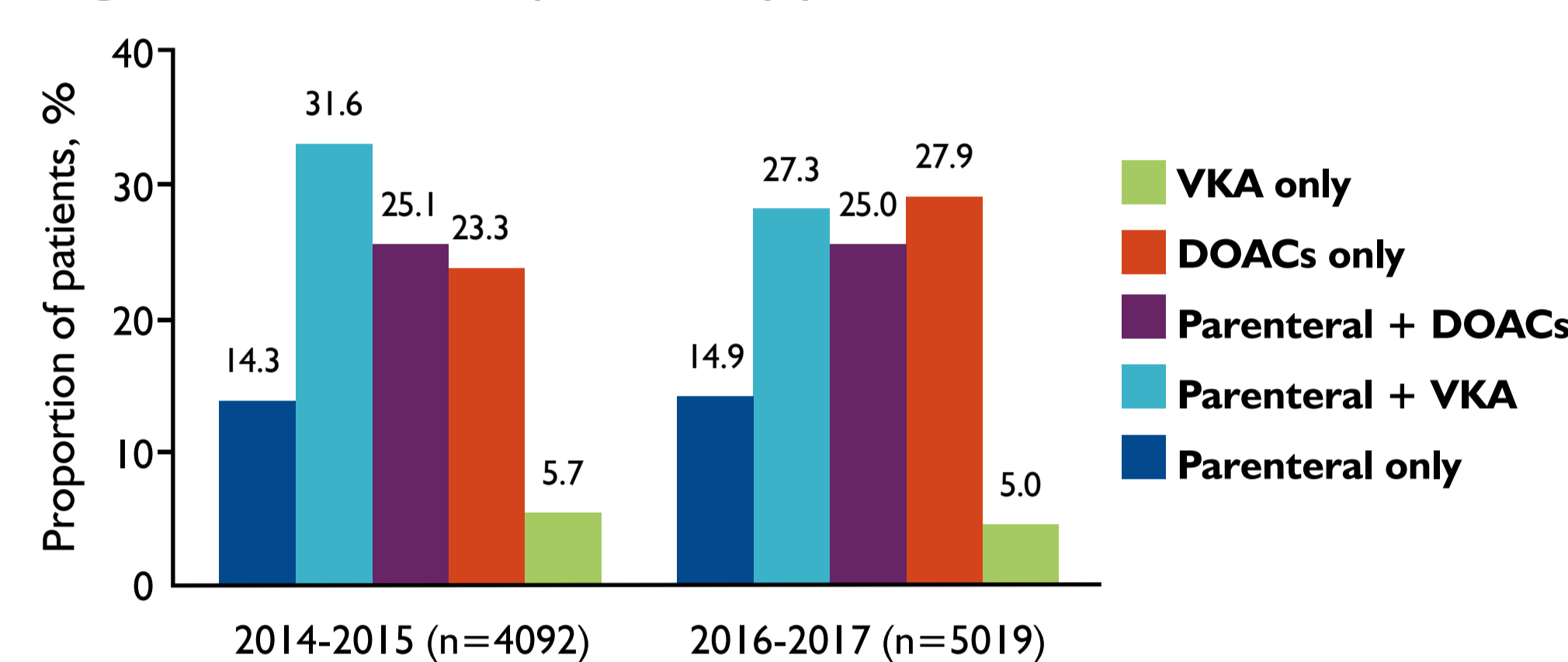


Table 3. Treatment patterns in special populations

	Parenteral only (n=1333)	Parenteral + VKA (n=2661)	Parenteral + DOACs (n=2278)	DOACs only (n=2356)	VKA only (n=483)
<b>Active cancer<sup>1</sup> (n=814)</b>	461 (56.6)	113 (13.9)	118 (14.5)	99 (12.2)	23 (2.8)
<b>History of cancer<sup>1</sup> (n=966)</b>	306 (31.7)	216 (22.4)	217 (22.5)	188 (19.5)	39 (4.0)
<b>Pregnancy (n=133)</b>	54 (40.6)	37 (27.8)	13 (9.8)	13 (9.8)	16 (12.0)
<b>Recent bleed or anaemia (n=292)</b>	57 (19.5)	115 (39.4)	60 (20.5)	38 (13.0)	22 (7.5)
<b>Renal impairment (n=330)</b>	53 (16.1)	154 (46.7)	50 (15.2)	44 (13.3)	29 (8.8)

<sup>1</sup>These two groups of patients are not mutually exclusive

## CONCLUSIONS

- GARFIELD-VTE provides a global perspective on AC treatment patterns for VTE, which not only varies by patient population, site of VTE but also by geographic region.
- The geographic variations of AC treatment patterns may reflect cultural differences but also registration and reimbursement of DOACs.
- The variation of AC treatment patterns over time is less than originally expected because momentum in DOACs prescribing had already taken hold when GARFIELD-VTE started.
- Corresponding to guideline recommendations, the vast majority of cancer patients received parenteral ACs only but also DOACs were used in a considerable number of patients.
- Surprisingly, DOACs were also used in some pregnant patients even though they are currently not recommended in pregnant and breast-feeding women.

## ACKNOWLEDGEMENTS

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## DECLARATION OF INTEREST

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