

VASCULAR ACCESS USE 2011 – 2014 IN GERMANY

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Background:

In a 2005-2009 cohort of patients on hemodialysis (HD) from the EDTA registry the rates of AV-fistulas (AVF) were decreasing in Europe. At the same time, DOPPS reports increasing use of central venous catheters (CVC) for vascular access (VA) for HD in most European countries.

Aim:

To analyze vascular access types over time in a large, current cohort of chronic HD patients in Germany.

Methods :

Design: retrospective cohort study based on the KfH provider database

Setting: ca. 200 outpatient dialysis centers in Germany with prospective data collection from electronic patient records

Patients: all patients (pt) in quarters Q1-2011 – Q4-2014, who were treated for more than 90 days with hemodialysis

Definitions/ Measurements:

In patients with a CVC and an AVF or AVG present at the same time, CVC was defined as the designated vascular access when it was used for more than 30 days.

Results:

Between 2011 and 2014 **24,758** pts were observed. Mean age was 69.8 (SD 15.7) years (66.8 y in 2011 and 68.2 in 2014). Table 1

Patients n	24.758
Age [y] (SD)	69.8 (15.7)
Age over 75 y [%]	40.2
Female [%]	38.6
Anemia (Hb <10 g/dl) [%]	12.4
Underweight (BMI < 18.5) [%]	3.4
Obesity (BMI > 30) [%]	24.5
Serum Albumin < 35 g/L [%]	28.8
Serum Albumin < 30 g/L [%]	6.4
Heart Failure [%]	37.4
Diabetes [%]	41.2
Coronary Disease [%]	39.6
COPD [%]	16.0
Peripheral Vascular Disease [%]	27.7
Cerebrovascular Disease [%]	22.0
> 4 Comorbidities [%]	27.5

Table 1: Characteristics of the prevalent study population 2011 – 2014.

SD: standard deviation; BMI: body mass index [kg/m²]; COPD: Chronic Obstructive Pulmonary Disease;

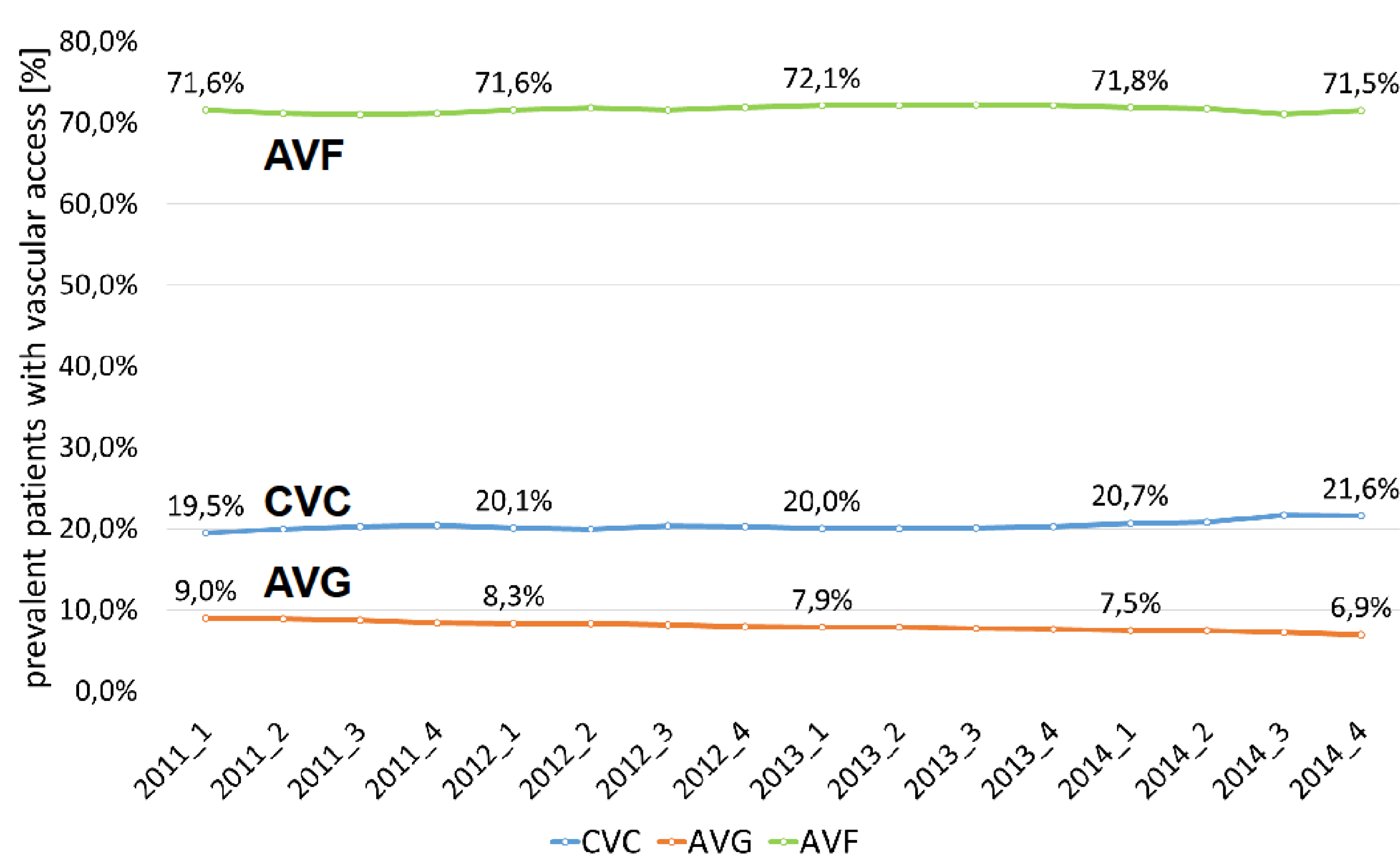


Figure 1: Vascular Access Rates Over Time: CVC use in prevalent patients was 20.3% and showed a small increase over time from 19.5% in 2011 to 21.6% in 2014 ($p < 0.001$). Concurrently, AVGs were decreasing (9.0% to 6.9%; $p < 0.001$) while AVF remained essentially unchanged. CVC: central venous catheter; AVG: arterio-venous graft; AVF: arterio-venous fistula

Conclusion:

In contrast to previous reports, in this large current cohort of hemodialysis patients in Germany AVF rates remained stable in prevalent patients while CVC rates increased at the expense of AVG. AVF rates in incident patients, however, decreased.

These results suggest that in addition to increasing the rate of primary AVF, efforts should also be directed at a speedy conversion to an AVF or AVG in patients who start HD with a CVC so as to limit risk exposure time.

We are indebted to all staff of the participating KfH kidney centers for their valuable efforts with data collection.

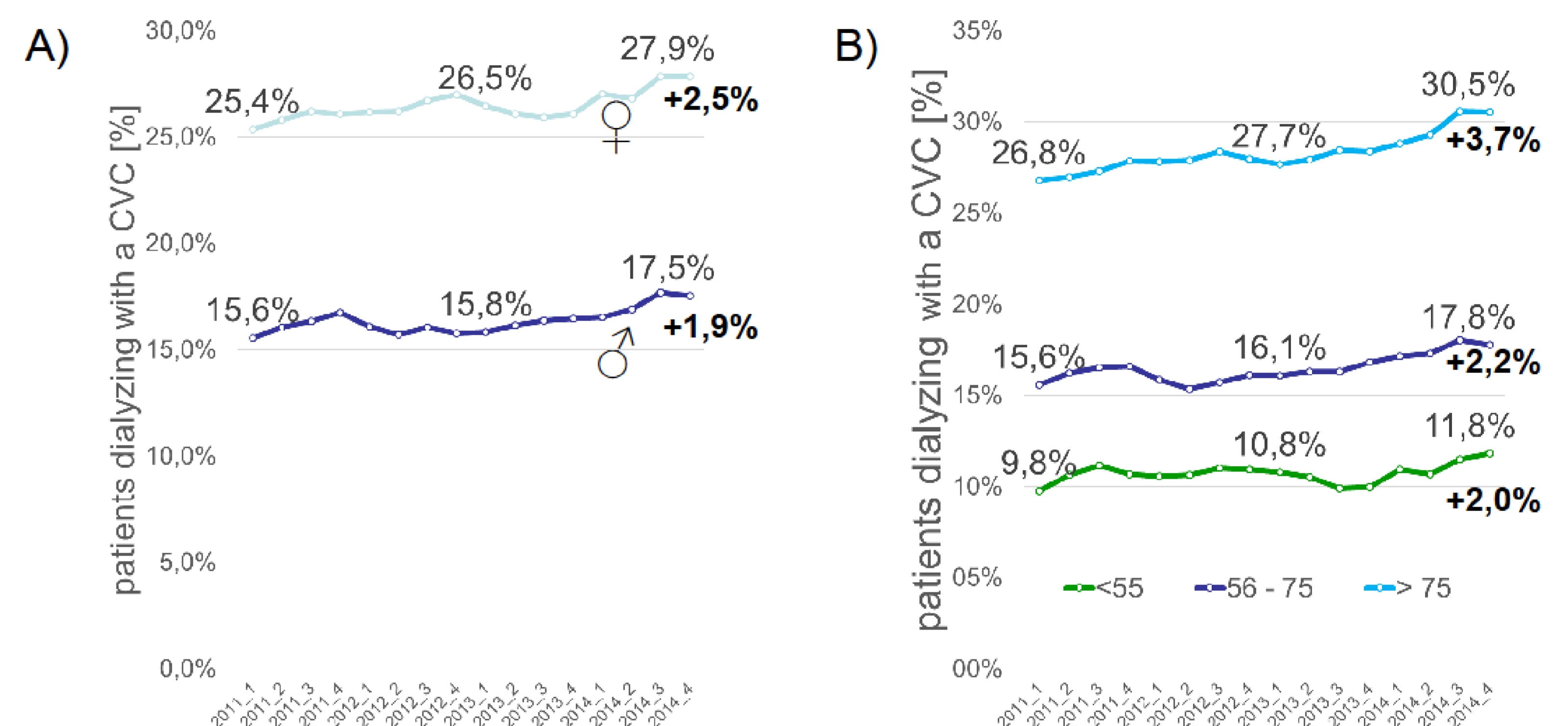


Figure 2: Temporal development of CVC as vascular access in prevalent patients 2011 – 2014: CVC rates were highest in women A) and in patients > 75y B). The largest increase over time also occurred in these groups.

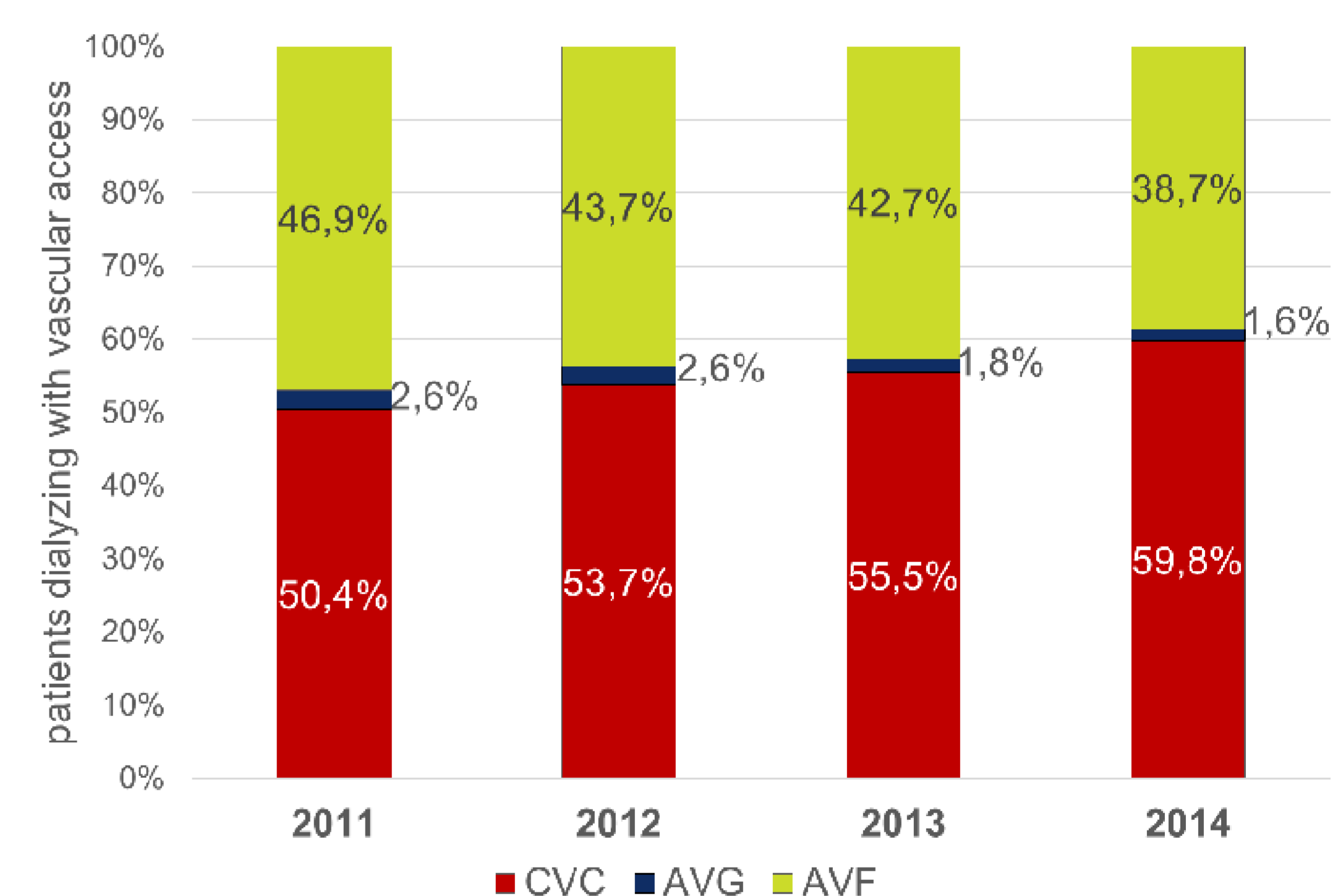


Figure 3: Temporal development of vascular access in incident patients 2011 – 2014

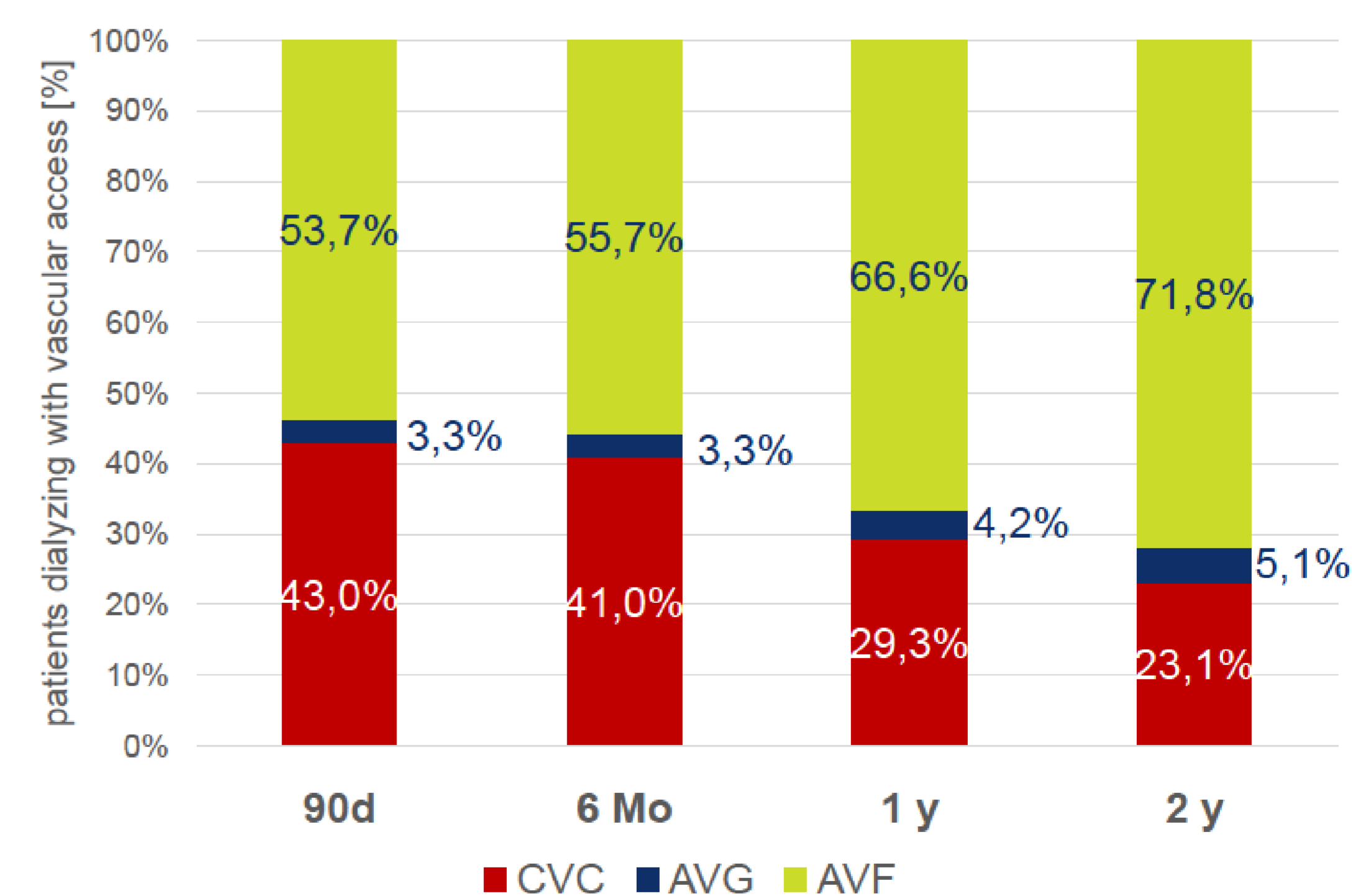


Figure 4: Temporal development of vascular access in incident patients over two years