

Dwell time and causes of removal related to Mini-Midline and Midline catheters in hospitalized COVID-19 versus non-COVID-19 patients.

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Introduction:

Coagulation disorders in novel coronavirus infection cause a pro-thrombotic state that might shorten the useful life time of a venous catheter and can increase risk of associated complications. This study aims to describe and compare the causes of removal and the meantime of use in midline and mini-midline catheters, in two cohorts of patients, with and without Covid-19 disease.

Methods:

This is an observational, retrospective, cohort study. Data were collected in Vall d’Hebron University Hospital located in Barcelona, Spain, from March 1 to May 15/2020, by the Venous Access Nursing Team.

Results:

A total of 344 catheters inserted in 305 patients were collected. In the Covid-19 cohort there were 88 patients (28.9%) and 96 catheters were placed, of which 84 were mini-midlines and 12 midlines. In the non-Covid-19 cohort there were 217 patients (71,1%) and 248 catheters were placed, of which 217 were mini-midline and 31 midline. The mean duration of the 96 catheters inserted in the Covid-19 patient cohort was 12 [7-21] days, while in the 248 without infection it was 11 [6-19] days. The main cause of removal in both groups was the end of treatment, 214 (62.2%), being significantly higher in Covid-19 free patients. The second cause was decease, and the third cause was catheter occlusion, higher and statistically significant in the non-Covid-19 cohort.

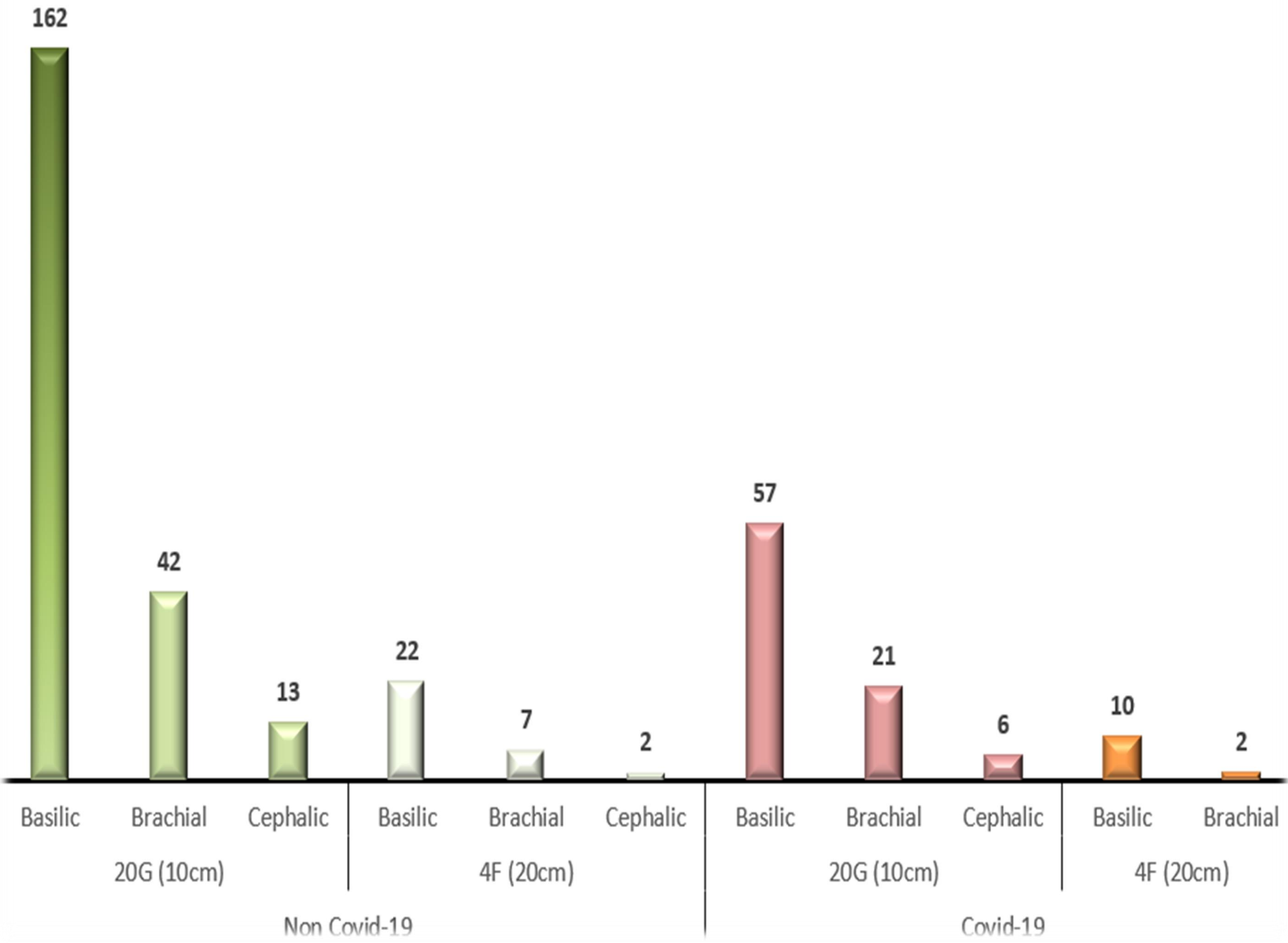
Descriptive main causes of withdrawal

Cause of withdrawal n = 344	Covid-19 (n = 96)	Non Covid-19 (n = 248)	P-Value
	n (%)	n (%)	
End of treatment	51 (53.12%)	163 (65.72%)	0.031 ^{2*}
Decease	22 (22.91%)	22 (8.87%)	0.001 ^{2*}
Occlusion	8 (8.33%)	43 (17.33%)	0.035 ^{2*}
Extravasation	8 (8.33%)	9 (3.62%)	0.072 ²
Suspected infection at the insertion site	4 (4.17%)	10 (4.03%)	0.955 ²
Infection diagnosed by catheter tip culture technique	3 (3.13%)	1 (0.4%)	0.068 ³

²Chi square test

³Fisher's exact test

*Statistically significant (p <0.05)



Conclusions:

Correct maintenance and care with an adequate nursing staff are the key to preserving the functionality of the catheter despite novel coronavirus infection. The study reinforces the evidence on the safety and suitability of midline and mini-midline catheters in both cohorts.