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The use of intravascular lines in intensive care units (ICUs) has been well assessed in recent years. However, a high proportion of central and peripheral catheters are placed in non-ICU patients, particularly in Internal Medicine wards, where information of the quality of care is scarce.

Objectives. To assess the use and management of endovascular lines in Internal Medicine Departments in Spain.

Methods. We performed a point prevalence study on all adult patients admitted to 47 Spanish Internal Medicine wards from hospitals of different sizes. Data from each department and from each patient were collected in pre-established protocols.

Results. Out of the 2,080 adult patients hospitalized in the study day, 1,689 (81.2%) had one or more intravascular lines at the moment of the study. Of the 1,826 lines, the distribution was as follows: peripheral lines, 93.5%; non-tunneled central venous catheters, 5%; and others, 1.6%. The location was: upper extremities, 95.6%; central vessels, 3.6%, and lower extremities, 0.3%. The percentage of patients with at least one inserted catheter was significantly higher in no-university hospitals and in those hospitals with <500 beds. According to the local evaluator, 92 (5.0%) catheters presented local signs of infection at the study day and 87 (5.2%) patients had signs of sepsis (related or not to the catheter). The local evaluator estimated that at the study point 19% of the catheters were not necessary anymore. Catheter insertion was mainly performed by nurses (96.3%). Parameters evaluating quality of care included: ultrasound guided insertion (1.3%), visible date of insertion (80.6%), formalized registration of the date of insertion (83.8%), daily record of catheter use need (40.6%), daily monitoring of the insertion site (94.5%), and use of closed connectors (71.6%). Data comparing hospitals regarding its university affiliation and number of beds are detailed in the table.

Conclusion. Our study provides a picture of catheter use and care in Spanish Internal Medicine Departments that shows clear cut of opportunities for improvement. Strategies similar to those applied in ICUs should be implemented in Internal Medicine Departments.

Table. General data of the patients and the catheters included in the study with statistically significant differences between university affiliation and number of beds

PATIENTS							
Variable	Total, N (%)	Univers., N(%)	No Univers., N(%)	p	<500 beds	≥500 beds	p
Total no. of patients with catheter	1,689/2,080 (81.2) 391/2,080 (18.8)	1,011 (78.3) 281 (2.7)	678 (88.0) 110 (14.0)	<0.001	1,144 (82.5) 243 (17.5)	545 (78.6) 148 (21.4)	0.03
Patients sex							
Male	936/1,689 (55.4)	537/1,011 (53.1)	399/678 (58.8)	0.02	641/1,144 (56.0)	295/45 (64.1)	0.48
Female	753/1,689 (44.6)	474/1,011 (46.9)	279/678 (41.2)		503/1,144 (44.0)	250/45 (55.9)	
Age (years) median (IQR)	78 (67-85)	78 (68-85)	78 (65-84)	0.04	78 (67-85)	78 (67-85)	0.94
McCauley mortality index							
no fatal	154/1,689 (9.1)	89/1,011 (8.8)	65/678 (9.6)	0.85	108/1,144 (9.4)	46/45 (10.2)	<0.001
ultimately fatal	737/1,689 (43.6)	444/1,011 (43.9)	293/678 (43.2)		529/1,144 (46.2)	208/45 (46.2)	
no fatal	788/1,689 (46.7)	478/1,011 (47.3)	320/678 (47.2)		507/1,144 (44.3)	281/45 (62.4)	
Charlson comorbidity index mean (SD)	6.23 (2.26)	6.11 (2.22)	6.41 (2.33)	0.06	6.40 (2.32)	5.88 (2.11)	<0.001
CATHETERS							
Type of catheter material							
Teflon	346/1,826 (19.1)	194/1,147 (16.9)	152/679 (22.8)	0.02	260/1,201 (20.1)	86/635 (16.6)	0.27
Polyurethane	1,285/1,826 (70.4)	828/1,147 (72.2)	457/679 (67.3)		901/1,201 (75.0)	384/635 (60.4)	
Silicone	176/1,826 (9.6)	115/1,147 (10.0)	61/679 (9.0)		118/1,201 (9.8)	58/635 (9.1)	
Others	16/1,826 (0.9)	10/1,147 (0.9)	6/679 (0.9)		12/1,201 (1.0)	4/635 (0.7)	
Visible date of insertion	1,471/1,826 (80.6)	938/1,147 (81.8)	533/679 (78.5)	0.08	1,025/1,201 (79.4)	446/635 (70.2)	0.05
Reason for catheter insertion							
Serum therapy	167/1,826 (9.1)	142/1,147 (12.4)	25/679 (3.7)	<0.001	129/1,201 (10.0)	38/635 (5.9)	<0.001
Antibiotic therapy	397/1,826 (21.8)	204/1,147 (17.8)	193/679 (28.4)		314/1,201 (26.1)	53/635 (8.3)	
Both	336/1,826 (18.4)	331/1,147 (28.9)	5/679 (0.7)		207/1,201 (17.2)	129/635 (20.3)	
Serum therapy and others	394/1,826 (21.6)	137/1,147 (11.9)	257/679 (37.8)		352/1,201 (29.3)	42/635 (6.6)	
Others	70/1,826 (3.8)	27/1,147 (2.4)	43/679 (6.3)		45/1,201 (3.7)	27/635 (4.2)	
Unknown							
Type of dressing used							
Transparent	1,195/1,826 (65.4)	742/1,147 (64.7)	453/679 (66.7)	0.014	782/1,201 (65.1)	413/635 (64.9)	<0.001
Opaque	485/1,826 (26.6)	329/1,147 (28.7)	160/679 (23.6)		391/1,201 (32.5)	192/635 (30.2)	
Transparent/Gauze	161/1,826 (8.8)	131/1,147 (11.4)	3/679 (0.4)		31/1,201 (2.6)	130/635 (20.5)	
Chlorhexidine impregnated sponge/dressing	31/1,826 (1.7)	2/1,147 (0.2)	16/679 (2.3)		2/1,201 (0.2)	14/635 (2.2)	
Others	129/1,826 (7.1)	97/1,147 (8.4)	32/679 (4.7)		113/1,201 (9.4)	16/635 (2.5)	
Combine closed connectors with open caps	518/1,826 (28.4)	385/1,147 (33.6)	133/679 (19.6)	<0.001	345/1,201 (28.7)	173/635 (27.2)	0.015
If there is no i.v. medication, why the catheter is still in place?							
Expected hospital discharge	32/229 (14.0)	18/100 (18.0)	14/126 (10.9)	0.13	22/190 (11.6)	10/39 (25.6)	0.05
Unknown	76/229 (33.2)	36/100 (36.0)	40/126 (31.0)		63/190 (33.2)	13/39 (33.3)	
Scheduled by clinician	121/229 (52.8)	46/100 (46.0)	75/126 (58.1)		105/190 (55.3)	16/39 (41.0)	
The nurse considers that the catheter is still necessary	1,474/1,826 (81.0)	952/1,147 (83.0)	522/679 (76.9)	0.001	1,018/1,201 (78.8)	456/635 (71.8)	0.002