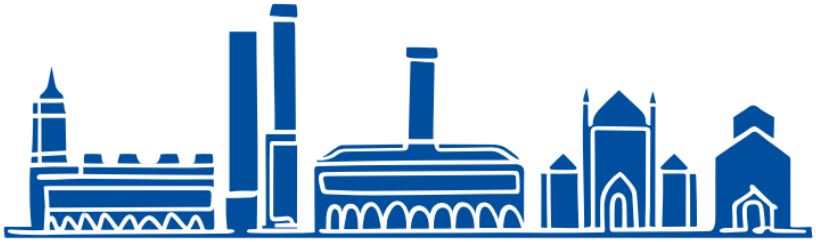
Scelta tra Cateteri Periferici Lunghi e Cateteri Midline

Adam Fabiani RN, PhD

Azienda Sanitaria Universitaria Giuliano Isontina - Trieste
Centro Unico Accessi Vascolari (CUAV)
Dipartimento Cardiotoracovascolare
Terapia Intensiva Cardiochirurgica
mail: adam.fabiani@units.it

XVIII PICC DAY
BOLOGNA
2-3 dicembre
2025



Cosa intendiamo per CVP Lungo e Catetere Midline?

Editorial

JVA The Journal of Vascular Access

Long peripheral catheters: Is it time to address the confusion?

The Journal of Vascular Access
1–4
© The Author(s) 2018
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/1129729818819730
journals.sagepub.com/home/jva
SAGE

Kirby R Qin[1], Ramesh M Nataraja[1,2] and Maurizio Pacilli[1,2]

JVA The Journal of Vascular Access

European recommendations on the proper indication and use of peripheral venous access devices (the ERPIUP consensus): A WoCoVA project

The Journal of Vascular Access
1–18
© The Author(s) 2021
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/11297298211023274
journals.sagepub.com/home/jva
SAGE

Mauro Pittiruti[1], Ton Van Boxtel[2], Giancarlo Scoppettuolo[1], Peter Carr[3], Evangelos Konstantinou[4], Gloria Ortiz Miluy[5], Massimo Lamperti[6], Godelieve Alice Goossens[7], Liz Simcock[8], Christian Dupont[9], Sheila Inwood[10], Sergio Bertoglio[11], Jackie Nicholson[12], Fulvio Pinelli[13] and Gilda Pepe[1]

Editorial

The NAVIGATE project: A G… WoCoVA position statement … nomenclature for vascular acc…

Matheus (Roland) van Rens[1], Robin van der Lee[1], Timothy R Spencer[2], Ton van Boxtel[3], Giovanni Barone[4], Alessandro Crocoli[5], Fulvio Pinelli[6], Mauro Pittiruti[7], on behalf of the WoCoVA Foundation (World Conference on Vascular Access) and of the Global Vascular Access Network (GloVANet)

Annals of Internal Medicine SUPPLEMENT

The Michigan Appropriateness Guide for Intravenous Catheters (MAGIC): Results From a Multispecialty Panel Using the RAND/UCLA Appropriateness Method

Vineet Chopra, MD, MSc; Scott A. Flanders, MD; Sanjay Saint, MD, MPH; Scott C. Woller, MD; Naomi P. O'Grady, MD; Nasia Safdar, MD, PhD; Scott O. Trerotola, MD; Rajiv Saran, MD, PhD; Nancy Moureau, BSN, RN; Stephen Wiseman, PharmD; Mauro Pittiruti, MD; Elie A. Akl, MD, MPH, PhD; Agnes Y. Lee, MD, MSc; Anthony Courey, MD; Lakshmi Swaminathan, MD; Jack LeDonne, MD; Carol Becker, MHSA; Sarah L. Krein, PhD, RN; and Steven J. Bernstein, MD, MPH

Short Peripheral Catheter = < 6 cm
Long Peripheral Catheter = 6 – 15 cm
Midline Catheter = > 15 cm

Peripheral IV Catheter = 3 – 6 cm
Midline Catheters = 7.5 – 25 cm

Original research article

JVA | The Journal of Vascular Access

Long peripheral catheters and midline catheters: Insights from a survey of vascular access specialists

The Journal of Vascular Access
1–6

DOI: 10.1177/1129729820966226
journals.sagepub.com/home/jva
SAGE

Kirby R Qin[1,3], Mauro Pittiruti[4], Ramesh M Nataraja[1,2,5] and Maurizio Pacilli[1,2,5]

Results

A total of 228 vascular access specialists from eight countries, including the United States ($n=208$), Australia ($n=8$), Canada ($n=5$), Brazil ($n=2$), Italy ($n=2$), China ($n=1$), Germany ($n=1$) and Mexico ($n=1$), completed the survey. Most clinicians identified their primary profession

The majority of participants (57.9%) agreed with the following classification of peripheral IV devices:

1. PIVCs: 2 to 6 cm in length, terminating distal to the axilla;
2. LPCs: 6–15 cm in length, terminating distal to the axilla;
3. MCs: 15–25 cm in length, terminating in the axilla.

Contents lists available at ScienceDirect

Thrombosis Research

journal homepage: www.elsevier.com/locate/thromres

Review Article

Complications associated to midline- and long peripheral catheters in adults. Systematic review of literature and proposal for a standardized model for data collection

Adam Fabiani [a,b], Nicola Aversana [c], Marilena Santoro [b], Gianfranco Sanson [d,*]

Midline-catheters: characteristics of the devices and major complications as rep

Author, Year	Catheter characteristics	Author's catheter classification				
Bahl, 2021	4 Fr/20 cm (PUR-AT)	Midline-catheter				
Campagna, 2018	4–5 Fr/20–25 cm (nd)	Midline-catheter	26 (NA) [273]	2.5 (R-AE)	NA	0.9 (US+Co)
Fabiani, 2020	18 G/18 cm (PET)	Long-peripheral-catheter	16 ± 10.8 [48]	10.6 (PR-C)	1.3 (DTP/TC)	1.3 (US+Co)
Fabiani, 2020	4 Fr/20 cm (PUR)	Midline-catheter	26 ± 22.6 [153]	6.3 (PR-C)	0.5 (DTP/TC)	1.9 (US+Co)
Fabiani, 2023	4 Fr/20 cm (PUR)	Midline-catheter	25.7 ± 20.4 [125]	3.4 (PR-C)	0 (DTP/TC)	0.9 (US+Co)
Frondizi, 2023	4–5 Fr/20–25 cm (PUR)	Midline-catheter	12.4 ± 11.2 [nd]	NA	3.2 (DTP)	1.1 (US)
Lisova, 2018	4 Fr/20 cm (PUR)	Midline-catheter	10 (1–112) [112]	NA	NA	3.4 (US+Co + CD)
Locatello, 2022	4–5 Fr/20–25 cm (PUR)	Midline-catheter	13.1 ± 7.7 [nd]	NA	0.3 (DTP/TC)	0.9 (US+Co)
Tomàs-Lòpez, 2022	4 Fr/30 cm (PUR)	Midclavicular-catheter	21.8 ± 24.3 [312]	6.0 (UR)	0.2 (DTP/TC)	0.4 (US+Co)

Long-peripheral-catheters: characteristics of the devices and major complications as reported by studies included in the review.

Author, Year	Catheter characteristics	Author's catheter classification	Dwelling days mean/median [max][a]	Catheter failure[b] (method)	CR-BSI[b] (method)	S-CRT[b] (method)
Bahl, 2021	4.5 Fr/15 cm (PUR-AT-AM)	Midline-catheter	10.1 ± 6.6 [NA]	22.8 (PR-UM/C)	0 (NHSN)	5.7 (US+Co)
Fabiani, 2020	20–18 G/8–10 cm (PET)	Long-peripheral-catheter	11 ± 8.9 [54]	15.9 (PR-C)	0 (DTP/TC)	1.2 (US+Co)
Fabiani, 2023	18 G/10 cm (PUR)	Long-peripheral-catheter	17.1 ± 12.3 [74]	5.1 (PR-C)	1,0 (DTP/TC)	3.1 (US+Co)
Jeon, 2022	20–18 G/8–10 cm (PUR)	Midline-catheter	16.8 ± 13.5 [76]	26 (PR-C/NC)	1,0 (BC/TC + RS)	0.5 (US)
Johnson, 2022	10 cm (PUR)	Midline-catheter	(11; 5.5–19.5) [NA]	12.8 (PR-C)	0 (BC[c] + TC/DTP+ NOI)	0.6 (US/V)
Jones, 2022	20 G/8–10 cm (PUR)	Midline-catheter	8 ± NA [38]	18.3 (PR-C)	NA	0.6 (US)
Bundgaard M, 2020	20–18 G/10 cm (PUR)	Midline-catheter	(8; *0–41*) [41]	71.8 (PR-C)	0 (BC/TC)	2.1 (US)
Marsh, 2022	20–18 G/8–10 cm (PUR)	Midline-catheter	(4.9; 3.2–8) [NA]	69.3 (APIF)	0 (NHSN)	5.3 (US)
Nielsen, 2021	20–18 G/10 cm (PUR)	Midline-catheter	(9; *0–60*) [60]	48.9 (PR)	0 (BC/TC + NOI)	0.8 (US)

Cosa li contraddistingue

	Periferico Lungo	Midline
Lunghezza	6-15	> 15
Lumi	Monolume	Bilume
Posizione della punta	Lontano dalla Vena Ascellare	Area Infraclavicolare
Urgenza/Emergenza	Si	No

Cosa li rende simili

	Periferico Lungo	Midline
Materiale	Polieterblocamide Polietilene Poliuretano	Silicone Poliuretano
Tecnica di puntura	US guidata	US guidata
Tecnica di inserzione	Seldinger Semplificata Seldinger Diretta	Seldinger Modificata Seldinger Diretta

Observational Study > J Vasc Access. 2020 Jul;21(4):449-455.
doi: 10.1177/1129729819883129. Epub 2019 Oct 24.

Mini-midline in difficult intravenous access patients in emergency department: A prospective analysis

Emanuele Gilardi [1], Rosangela Giannuzzi [1], Kidane WoldeSellasie [1], Alfonso Piano [1], Mauro Pittiruti [2], Giancarlo Scoppettuolo [3]

> Int J Emerg Med. 2016 Dec;9(1):3. doi: 10.1186/s12245-016-0100-0. Epub 2016 Feb 4.

Ultrasound-guided "short" midline catheters for difficult venous access in the emergency department: a retrospective analysis

Giancarlo Scoppettuolo [1], Mauro Pittiruti [2], Sara Pitoni [3], Laura Dolcetti [4], Alessandro Emoli [5], Alessandro Mitidieri [6], Ivano Migliorini [7], Maria Giuseppina Annetta [8]

Review

JVA The Journal of Vascular Access

European recommendations on the proper indication and use of peripheral venous access devices (the ERPIUP consensus): A WoCoVA project

The Journal of Vascular Access 1–18

DOI: 10.1177/11297298211023274
journals.sagepub.com/home/jva
SAGE

Mauro Pittiruti[1], Ton Van Boxtel[2], Giancarlo Scoppettuolo[1], Peter Carr[3], Evangelos Konstantinou[4], Gloria Ortiz Miluy[5], Massimo Lamperti[6], Godelieve Alice Goossens[7], Liz Simcock[8], Christian Dupont[9], Sheila Inwood[10], Sergio Bertoglio[11], Jackie Nicholson[12], Fulvio Pinelli[13] and Gilda Pepe[1]

> J Infus Nurs. 2025 Jul-Aug;48(4):256-260. doi: 10.1097/NAN.0000000000000598. Epub 2025 Jul 7.

Use of Midline Catheters for Blood Specimen Collection in Difficult Intravenous Access Patients: A Quality Improvement Project

Danielle Kennedy [1], Melissa Neri, Patricia C Pawlow

Observational Study > Heart Lung. 2017 Jan-Feb;46(1):46-53.
doi: 10.1016/j.hrtlng.2016.09.003. Epub 2016 Oct 22.

Ultrasound-guided deep-arm veins insertion of long peripheral catheters in patients with difficult venous access after cardiac surgery

Adam Fabiani [1], Lorella Dreas [1], Gianfranco Sanson [2]

> Am J Infect Control. 2020 Oct;48(10):1158-1165. doi: 10.1016/j.ajic.2019.12.0
Epub 2020 Jan 21.

Midline or long peripheral catheters in dif… venous access conditions? A comparative … patients with acute cardiovascular disease

Adam Fabiani [1], Valentina Eletto [1], Lorella Dreas [1], Daria Beltrame [1], Gianfran…

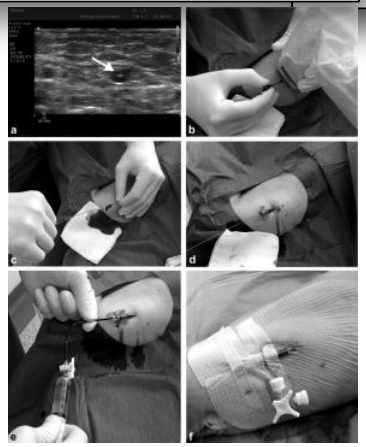
> J Vasc Access. 2021 Nov 17;24(5):904 - 910. doi: 10.1177/11297298211059648. Print 2023 Sep.

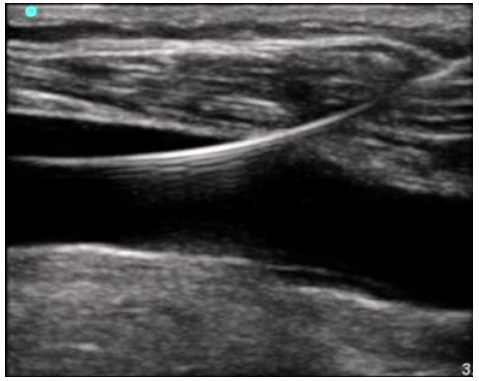
Defining difficult intravenous access (DIVA): A systematic review

Amit Bahl [1], Steven Johnson [1], Kimberly Alsbrooks [2], Alicia Mares [2], Smeet Gala [2], Klaus Hoerauf [2 3]

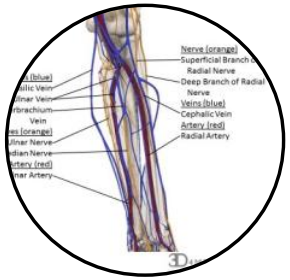
The indications for specific PVADs are mainly based on the expected duration of treatment:

- *SPCs are appropriate for emergency and/or short duration access (24–48 h)*
- *"integrated" SPCs are appropriate for non-emergency access, when expected duration is 2–7 days*
- *LPCs are appropriate in DIVA patients, or when expected duration is 1–4 weeks*
- *MCs are appropriate when expected duration >4 weeks.*

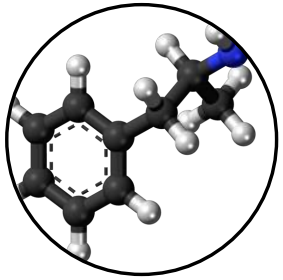




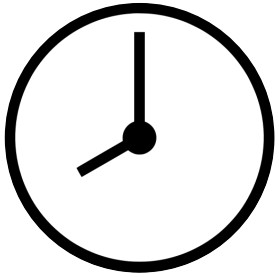
Midline, or Long Peripheral Catheter: That is the question



Sede di inserzione

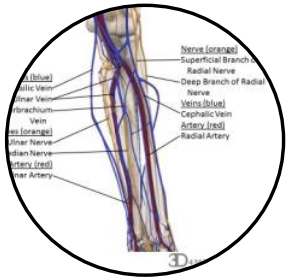


Farmaci

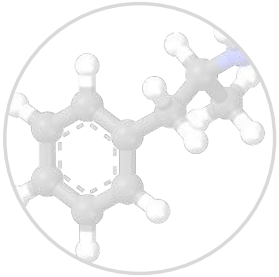


Durata attesa

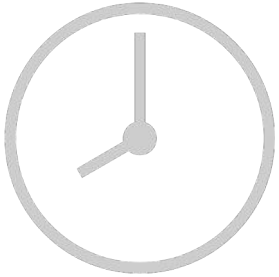
Midline, or Long Peripheral Catheter: That is the question



Sede di inserzione



Farmaci



Durata attesa

Sede di inserzione?

JVA The Journal of Vascular Access

Editorial

The NAVIGATE project: A GloVANet–WoCoVA position statement on the nomenclature for vascular access devices

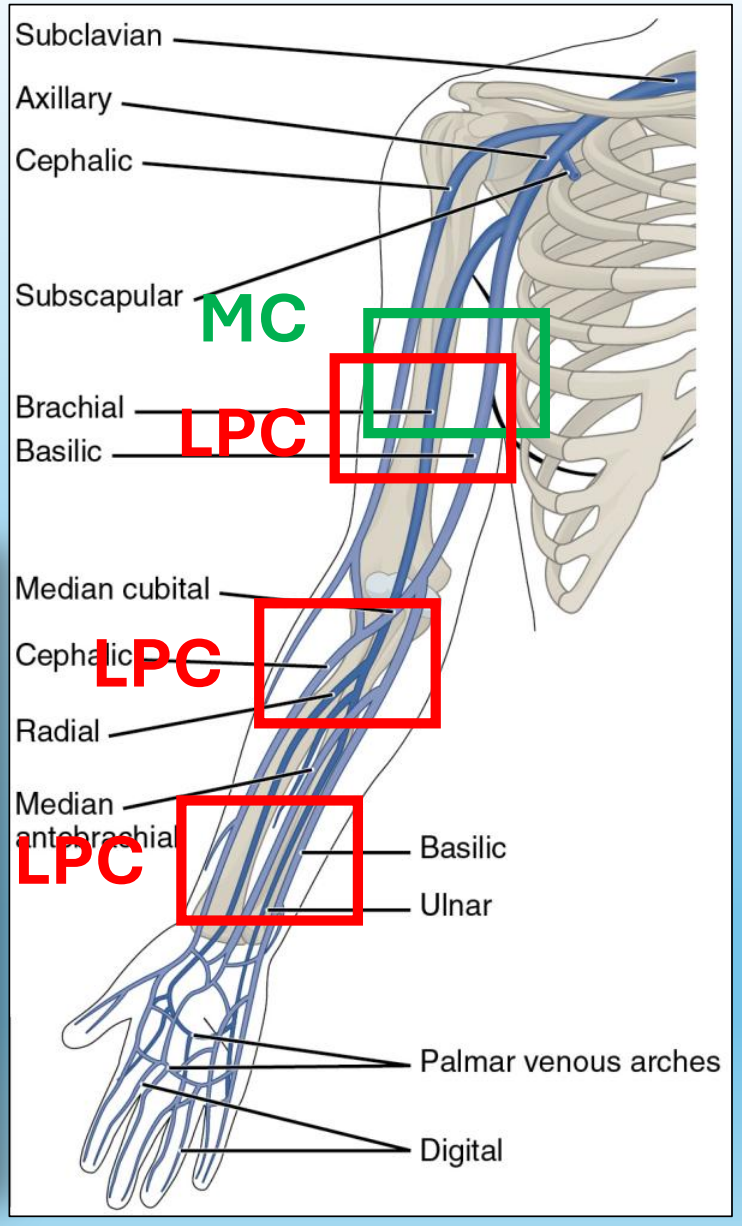
The Journal of Vascular Access
1–8

DOI: 10.1177/11297298241291248
journals.sagepub.com/home/jva
Sage

Matheus (Roland) van Rens[1], Robin van der Lee[1], Timothy R Spencer[2], Ton van Boxtel[3], Giovanni Barone[4], Alessandro Crocoli[5], Fulvio Pinelli[6], Mauro Pittiruti[7], on behalf of the WoCoVA Foundation (World Conference on Vascular Access) and of the Global Vascular Access Network (GloVANet)

Table 3. Terminology of venous access devices in the adult and pediatric population.

PVAD—peripheral venous access devices	
SPC	Short peripheral catheter - catheters with a length of <6 cm. - usually inserted in the forearm
LPC	Long peripheral catheter (a.k.a. mini-midline or short midline) - catheters with a length from 6 to 15 cm - inserted in the forearm or arm - tip located in the veins of the forearm or upper arm
MC	Midline catheter (a.k.a. midclavicular catheter) - catheters longer than 15 cm - inserted in deep veins of the upper arm - tip located in the axillary vein or subclavian vein



Sede di inserzione?

Infusion Therapy Standards of Practice

INFUSION NURSES SOCIETY
SETTING THE STANDARD FOR INFUSION CARE®

9TH EDITION

REVISED 2024

KEY DEFINITIONS

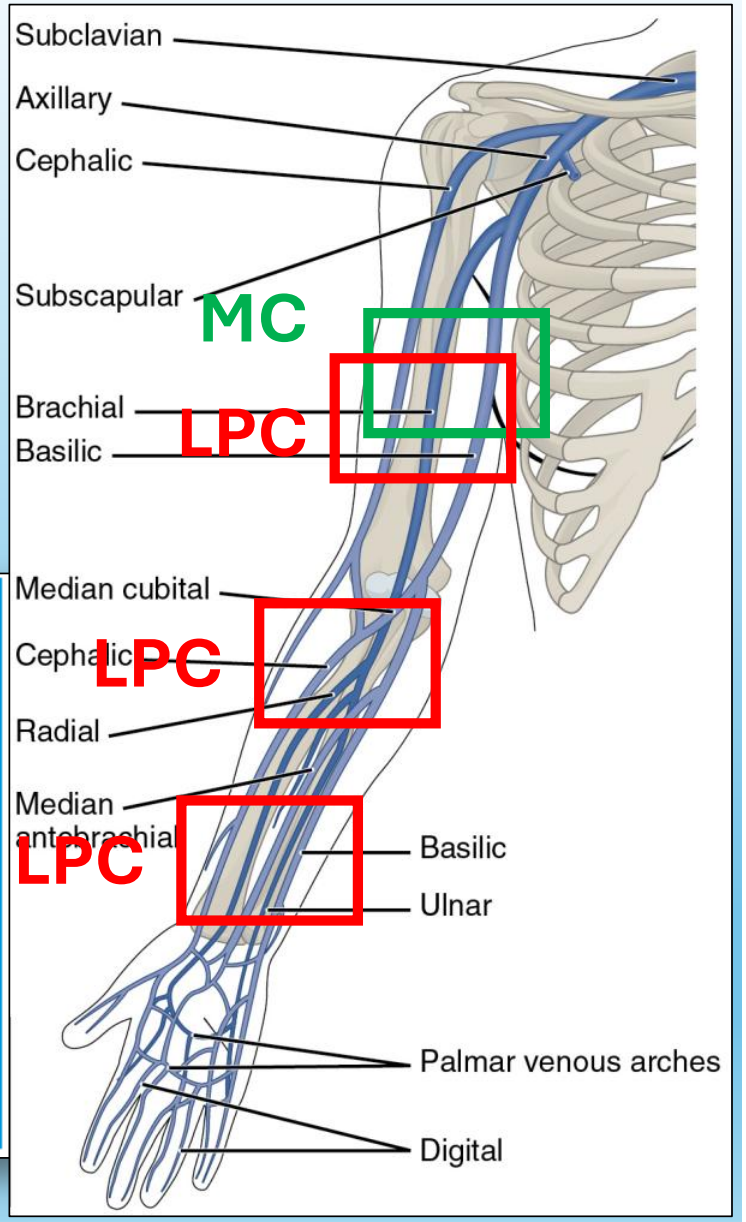
Peripheral intravenous catheters (PIVCs): are inserted into and reside in veins of the periphery that includes all extremities, the external jugular vein, and scalp veins in neonates. PIVCs are inserted into superficial veins located just under the skin in the superficial tissue, as well as deep veins located under the muscle tissue.

INS categorizes 3 types of PIVCs:

Short peripheral intravenous catheter (short PIVC): an over-the-needle catheter with a hollow metal stylet (needle) positioned inside the catheter, generally inserted in superficial veins.

Long peripheral intravenous catheter (long PIVC): inserted in either superficial or deep peripheral veins and offers an option when a short PIVC is not long enough to adequately cannulate the available vein. A long PIVC can be inserted via traditional over-the-needle technique or with more advanced procedures, such as Seldinger and accelerated Seldinger techniques.

Midline peripheral catheter (midline): inserted into a peripheral vein of the upper arm via the basilic, cephalic, or brachial vein with the terminal tip located at the level of the axilla in children and adults; for neonates, in addition to arm veins, midline catheters may be inserted via a scalp vein with the distal tip located in the jugular vein above the clavicle or in the lower extremity with the distal tip located below the inguinal crease.



Original research article

JVA The Journal of Vascular Access

Long versus conventional peripheral intravenous catheters to reduce venipunctures during hospital stay: A randomized controlled trial

The Journal of Vascular Access
1–11

DOI: 10.1177/11297298251385595
journals.sagepub.com/home/jva
Sage

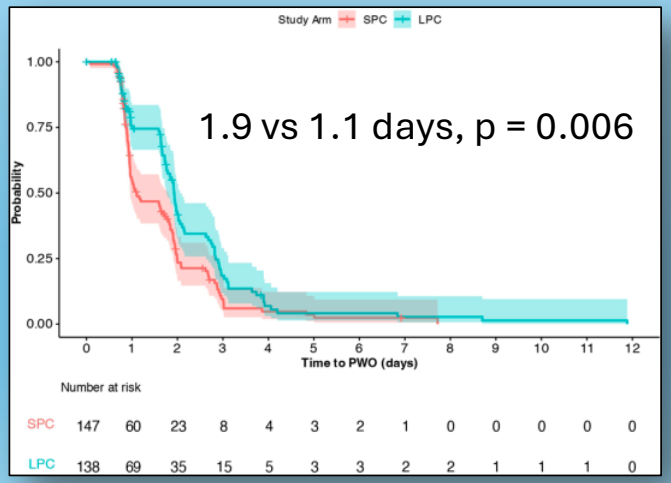
Filippo Binda[1*], Alessandro Galazzi[1,2*], Federica Marelli[1], Gianluca Salinaro[1], Matteo de Vecchi[3], Serena Spagna[3], Alessia Marcotullio[1], Jessica Calegari[1], Dario Laquintana[1*] and Simone Gambazza[1,4*]

Popolazione

- NON pazienti DIVA
- NON tecnica US-Guidata

Risultati

- No differenze in venipunture successive
- No differenze in Catheter Failure
- Non differenze cliniche in PWO time



1.9 vs 1.1 days, p = 0.006

Table 3. Characteristics of vascular access management.

Vascular access management	SPC *n* = 147	LPC *n* = 138	*p*-Value
Reasons of catheter removal			
Catheter-days	388.5	408.7	
Complications (overall incidence rate)*	203.3	149.3	0.076
Malfunction (incidence rate)*	128.7	71.0	0.013
Phlebitis and pain (incidence rate)*	43.8	44.0	1.000
Self-removal (incidence rate)*	12.9	19.6	0.582
Occlusion (incidence rate)*	12.9	4.9	0.280
Catheter-related thrombosis (incidence rate)*	5.1	9.8	0.688

Short VS Long Peripheral Catheter

Standard Versus Long Peripheral Catheters for Multiday IV Therapy: A Randomized Controlled Trial

Kirby R. Qin, MBBS(Hons), BMedSc(Hons),[a,b,c] Nicholas Ensor, MBBS(Hons), BMedSc(Hons),[a,b,c] Richard Barnes, MBBS, FRANZCA,[d] Anna Englin, MBBS, FRANZCA,[d] Ramesh M. Nataraja, MBBS, FRCS(Paeds), FRACS(Paeds),[a,b,e] Maurizio Pacilli, MBBS(Hons), MD(Research), FRCS(Paeds)[a,b,e]

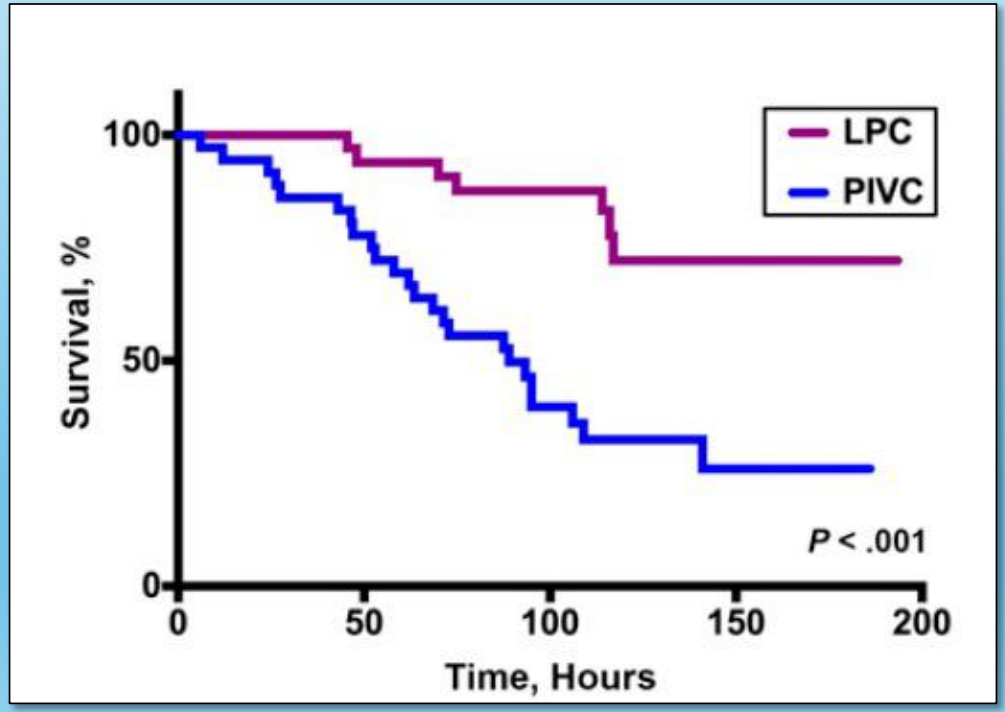


TABLE 2 Primary and Key Secondary Outcomes

Outcome	All (*N* = 72)	PIVCs (*n* = 36)	LPCs (*n* = 36)	RR (95% CI)	Significance, *P*
All catheters					
Duration of IVT, median (range), d	5.1 (1.9–16.1)	5.4 (3.0–16.1)	5.0 (1.9–10.8)	—	.86
No. postoperative catheters, median (range)[a]	1 (1–5)	2 (1–5)	1 (1–3)	—	.0002
Trial catheter					
Catheter duration, median (range), d	4.1 (0.3–8.1)	3.5 (0.3–7.8)	4.8 (1.9–8.1)	—	.01
Completed treatment with index catheter, *n* (%)	43 (59.7)	14 (38.9)	29 (80.6)	2.1 (1.4–3.3)	.0006
Catheter failure, *n* (%)	31 (43.1)	24 (66.7)	7 (19.4)	3.4 (1.8–7.1)	.0001
Per 1000 catheter-days[b]	—	187.9	41.0	4.6	—
Infiltration, *n* (%)	13 (18.1)	12 (33.3)	1 (2.8)	12.0 (2.2–70.3)	.001
Per 1000 catheter-days	—	93.6	5.9	—	—
Occlusion, *n* (%)	9 (12.5)	5 (13.9)	4 (11.1)	1.3 (0.4–4.0)	>.99
Per 1000 catheter-days	—	39.0	23.4	—	—
Dislodgement, *n* (%)	6 (8.3)	4 (11.1)	2 (5.6)	2.0 (0.5–9.0)	.67
Per 1000 catheter-days	—	31.2	11.7	—	—
Phlebitis, *n* (%)	2 (2.8)	1 (2.8)	1 (2.8)	1.0 (0.1–9.4)	>.99
Per 1000 catheter-days	—	7.8	5.9	—	—

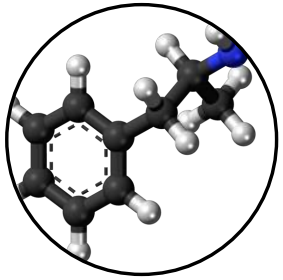
P values were calculated by using the Mann–Whitney *U* test and Fisher's exact test. —, not applicable.

[a] Total postoperative IV catheters = 110 (PIVC group = 66 catheters; LPC group = 44 catheters).

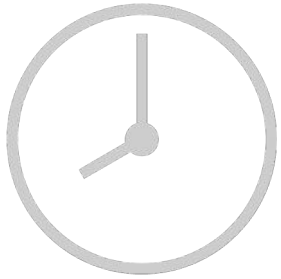
[b] Total catheter-days = 298.5 d (LPCs = 170.8 d; PIVCs = 127.7 d).

Midline, or Long Peripheral Catheter: That is the question

Sede di inserzione

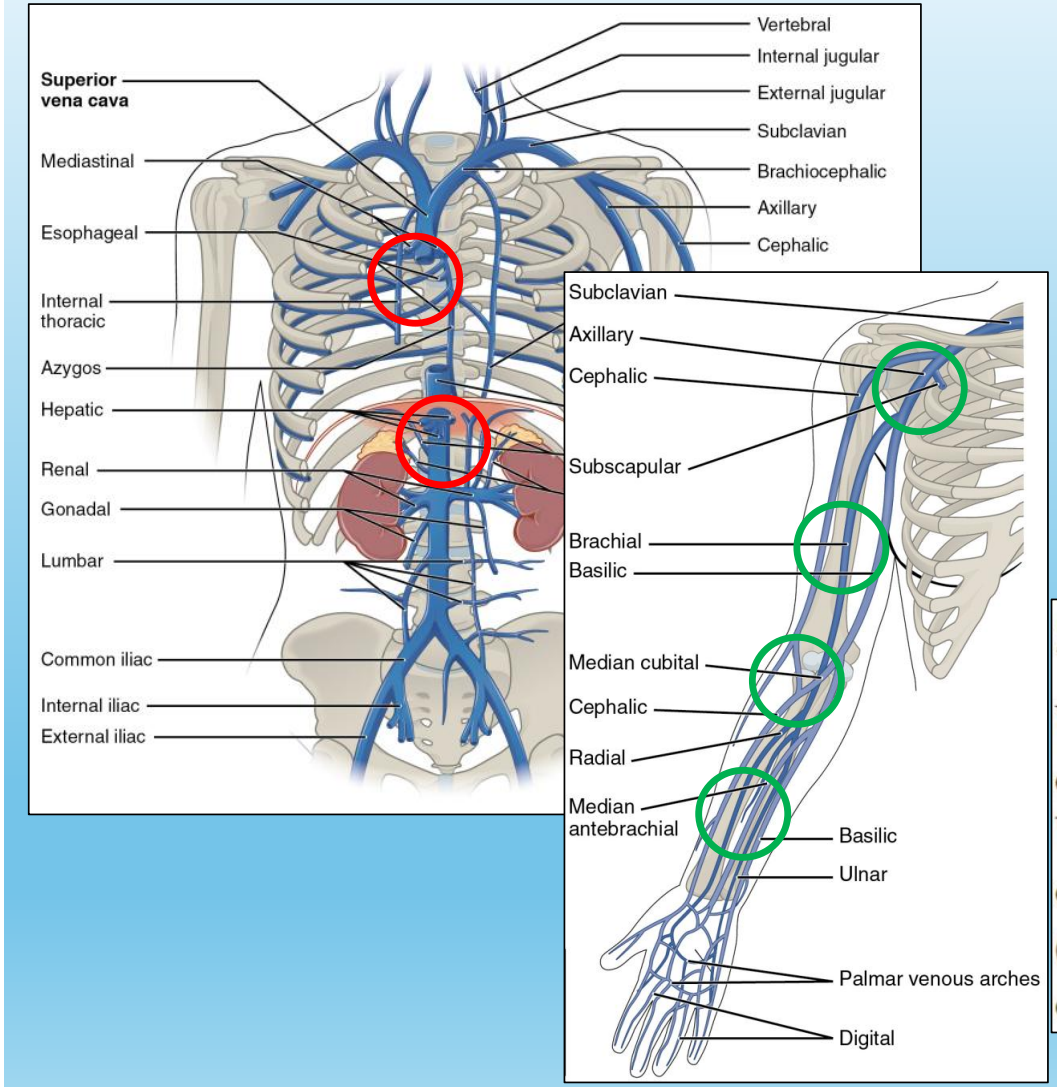


Farmaci



Durata attesa

Tipologia di farmaco da somministrare?



Review

JVA The Journal of Vascular Access

European recommendations on the proper indication and use of peripheral venous access devices (the ERPIUP consensus): A WoCoVA project

The Journal of Vascular Access
1–18

DOI: 10.1177/1129729821023274
journals.sagepub.com/home/jva
SAGE

Mauro Pittiruti[1], Ton Van Boxtel[2], Giancarlo Scoppettuolo[1], Peter Carr[3], Evangelos Konstantinou[4], Gloria Ortiz Miluy[5], Massimo Lamperti[6], Godelieve Alice Goossens[7], Liz Simcock[8], Christian Dupont[9], Sheila Inwood[10], Sergio Bertoglio[11], Jackie Nicholson[12], Fulvio Pinelli[13] and Gilda Pepe[1]

Section 1 – Definition and classification

Venous access devices (VADs) are defined as peripheral or central based on the position of the tip of the catheter. Any VAD with the tip located in the superior vena cava (SVC) or in the inferior vena cava (IVC) or in the right atrium (RA) should be considered as a central venous access device (CVAD). This definition is arbitrary, but it is based

Infusion Therapy Standards of Practice

9TH EDITION
REVISED 2024

INFUSION NURSES SOCIETY
SETTING THE STANDARD FOR INFUSION CARE®

Review

JVA | The Journal of Vascular Access

European recommendations on the proper indication and use of peripheral venous access devices (the ERPIUP consensus): A WoCoVA project

Mauro Pittiruti[1], Ton Van Boxtel[2], Giancarlo Scoppettuolo[1], Peter Carr[3], Evangelos Konstantinou[4], Gloria Ortiz Miluy[5], Massimo Lamperti[6], Godelieve Alice Goossens[7], Liz Simcock[8], Christian Dupont[9], Sheila Inwood[10], Sergio Bertoglio[11], Jackie Nicholson[12], Fulvio Pinelli[13] and Gilda Pepe[1]

The Journal of Vascular Access
1–18

DOI: 10.1177/1129729821
journals.sagepub.com/home/jva
SAGE

(1) short to medium term infusion of peripherally compatible solutions

- *solutions with pH 5–9*
- *drugs with osmolarity <600 mOsm/L*
- *parenteral nutrition with osmolarity <800–850 mOsm/L*
- *any drug or solution not associated with potential endothelial damage*

C. Avoid use of short PIVC for continuous infusion of medication with irritant or vesicant properties.[1,2,10] (I)

1. For time-critical infusions (eg, vasopressors), consider the type and dose of medication and its mode of action (vasoconstriction vs vasodilation). Where appropriate, begin the infusion through a PIVC. The PIVC should be replaced with a central venous access device (CVAD) as early as possible, balancing the acuity of the
al infusio
(see Stan

D. Use a restri
(≤10% and/o
to administer
eral device (re

D. Do not use a midline for continuous infusion of vesicant therapy, PN, or other infusates with extremes of pH or osmolarity (refer to Standard 61, *Parenteral Nutrition*; Standard 65, *Vasopressor Administration*).

1. Further clinical trials evaluating the appropriate use of midlines for vasopressors (drug type and duration) are needed (see Standard 65, *Vasopressor Administration*).[31] (IV)

E. Increase catheter site surveillance when administering intermittent infusions for any duration of known irritants and vesicants due to increased risk of phlebitis or extravasation (see Standard 39, *Vascular Access Device Post-Insertion Care*; Standard 44, *Infiltration and Extravasation*).[22-24,32] (II)

antibiotics

MDPI

Systematic Review

Physicochemical Characteristics of Antimicrobials and Practical Recommendations for Intravenous … A Systematic Review

Fabio Borgonovo [1,†], Massimiliano Quici [2,†], Antonio Gidaro [2,*,†], Davide …, Cristina Gervasoni [1], Maria Calloni [2], Elena Martini [2], Leyla La Cava [2], Spinell…, Andrea Gori [1] and Antonella Foschi [1,†]

Antibiotics

Name	Red Flag and Vesicant Properties	pH	mOsm/L	Phlebitis (Incidence ≥ 5%)	Diluent	Dosage	Inf…
Amikacin [15–19]		3.5–5.5	312–383	No	0.9% NaCl/D5W	15 mg/kg	Ove…
Amoxicillin/clavulanate [20,21]		8.9	290–442	No	0.9% NaCl	1–2 g q 8 h	At l…
Ampicillin [22,23]		8–10	238–372	Yes	0.9% NaCl	2 g q 4 h	Ov…
Ampicillin/Sulbactam [24,25]		8–10	320–400	Yes	0.9% NaCl	3 g q 6 h	Ov…
Azithromycin [26–30]		6.4–6.8	280–321	Yes	0.9% NaCl/D5W	500 mg q 24 h	At l…
Aztreonam [31–34]		6	315–352	No	0.9% NaCl/D5W	2 g q 6–8 h	Ove…
Cefazolin [23]		6	315–352	No	0.9% NaCl	1–2 g q 8 h	Ov…
Cefepime [35–39]		4–6	362–396	No	0.9% NaCl/D5W	1–2 g q 8–12 h	Ov…
Cefiderocol [40,41]		5.2–5.8	NA	Yes	0.9% NaCl	2 g q 6–8 h	At l…
Cefmetazole [42]		5.5–7.5	300	No	0.9% NaCl	1–2 g q 12 h	Ove…
Cefodizime [43,44]		4.5–6.5	280–320	No	0.9% NaCl/D5W	1–3 g q 8–12 h	Ove…
Cefoperazone [45]		6–8	265–335	No	0.9% NaCl/D5W	2–4 g/day divided q 12 h	Ove…

Scientia Pharmaceutica

ÖSTERREICHISCHE PHARMAZEUTISCHE GESELLSCHAFT

MDPI

Review

Physicochemical Characteristics of Cardiological Drugs and Practical Recommendations for Intravenous Adminis… A Systematic Review

Massimiliano Quici [1,†], Elena Martini [1,†], Davide Giustivi [2], Maria Calloni [1], Chiara Cogliati…, Antonella Foschi [3], Andrea Gori [1,3], Paolo Zappa [1], Francesco Casella [1], Arianna Bartoli [1], Leyla…, Alessia Meschia [1], Rosita Celano [1], Francesco Urso [1], Dario Cattaneo [4] and Antonio Gidaro [2,*]

Cardiologic Drugs and Line of Infusion

Name	Red Flag and/or Vesicant Properties	pH	mOsm/Kg	Phlebitis (Incidence ≥ 5%)	Diluent	Loading Dose	Ma…
Antiarrhythmics							
Adenosine [17–22]		6–7.5	261–319	no	D5W/NS	6 mg	
Amiodarone [23–40]	vesicant	3.7–4.3	304	yes	D5W	5 mg/Kg	10–…
Deslanoside [41]		5–7	NA	no	NS	NA	
Digoxin [33,42–44]	vesicant	6.8–7.2	455	yes	D5W	8–12 mcg/Kg	¼ lo…
	vesicant	6.8–7.2	421	yes	NS	8–12 mcg/Kg	¼ lo…
Diltiazem [43–47]		3.7–4.1	NA	no	D5W/NS	0.25 mg/Kg	1…
Disopyramide [48]		4–5	NA	no	NS	NA	
Esmolol [49–57]	vesicant	4.5–5.5	300	no	NS	0.5 mg/Kg	0.05–0.2…
Flecainide [58]		5.8	300	no	D5W/NS	2 mg/Kg	1.5 mg/K… 0.1–0.2…
Ibutilide [59–62]		4.6	NA	no	D5W/NS	NA	0.… (m…
Labetalol [53,63–66]		3–4.5	249	no	D5W	20 mg	1–2…
		3–4.5	229	no	NS	20 mg	1–2…
Landiolol [57,67–70]		6.3	1896	no	D5W/NS	100 mcg/Kg/min	10–40 …
Lidocaine [30,71–75]		6.5	280–305	no	D5W	1–1.5 mg/Kg	

Correction to: Standardization and Chemical Characterization of Intravenous Therapy in Adult Patients: A Step Further in Medication Safety

Silvia Manrique-Rodríguez[1,2,3] · Irene Heras-Hidalgo[1,2] · M. Sagrario Pernia-López[1,2,3] · Ana Herranz-Alonso[1,2,3] · M. Camino del Río Pisabarro[4,5] · M. Belén Suárez-Mier[4,6] · M. Antonia Cubero-Pérez[4,7] · Verónica Viera-Rodríguez[4,8] · Noemí Cortés-Rey[4,9] · Elizabeth Lafuente-Cabrero[4,10] · M. Carmen Martínez-Ortega[4,11] · Esther Bermejo-López[12,13] · Cristina Díez-Sáenz[14] · Piedad López-Sánchez[3,15] · M. Luisa Gaspar-Carreño[3,16] · Rubén Achau-Muñoz[3,16] · Juan F. Márquez-Peiró[3,17] · Marta Valera-Rubio[3,18] · Esther Domingo-Chiva[3,19] · Irene Aquerreta-González[3,20] · Ignacio Pellín Ariño[12,21] · M. Cruz Martín-Delgado[12,21] · Manuel Herrera-Gutiérrez[12,22] · Federico Gordo-Vidal[12,23] · Pedro Rascado-Sedes[12,24] · Emilio García-Prieto[12,25] · Lucas J. Fernández-Sánchez[26] · Sara Fox-Carpentieri[27] · Carlos Lamela-Piteira[3,28] · Luis Guerra-Sánchez[29] · Miguel Jiménez-Aguado[29] · María Sanjurjo-Sáez[1,2,3]

Table 2 Standard concentrations and physicochemical characterization

DRUG	CONCENTRATION	DILUENT	MEAN OSMOLALITY [a]	DENSITY [b]	MEAN OSMOLARITY [c]	pH	VESICANT
ACYCLOVIR (amp 25 mg/ml 10 ml) TEDEC-MEIJI FARMA, S.A.	5 mg/mL (500 mg/100 mL)	D5W	287±0.58	1.043	300	10.46±0.02	YES
		NS	279±2.08	1.032	288	11.04±0.03	YES
ALBUMIN HUMAN (5% vial 250 mL, 20% ALBUNORM® vial 100 mL) OCTAPHARMA	5%	-	274±1.53	1.042	286	7.12±0.02	NO
	20%	-	274±0.58	1.059	290	7.04±0.01	NO
AMIKACIN (vial 500 mg/2 mL) B.BRAUN MEDICAL, S.A.	5 mg/mL (500 mg/100 mL)	D5W	308±1.00	1.047	322	4.42±0.01	NO
		NS	283±1.53	1.034	293	4.87±0.01	NO
	10 mg/ml	-	304±2.31	1.037	316	4.55±0.03	NO

Antimicrobial Stewardship & Healthcare Epidemiology (2024), **4**, e116, 1–3
doi:10.1017/ash.2024.363

SHEA

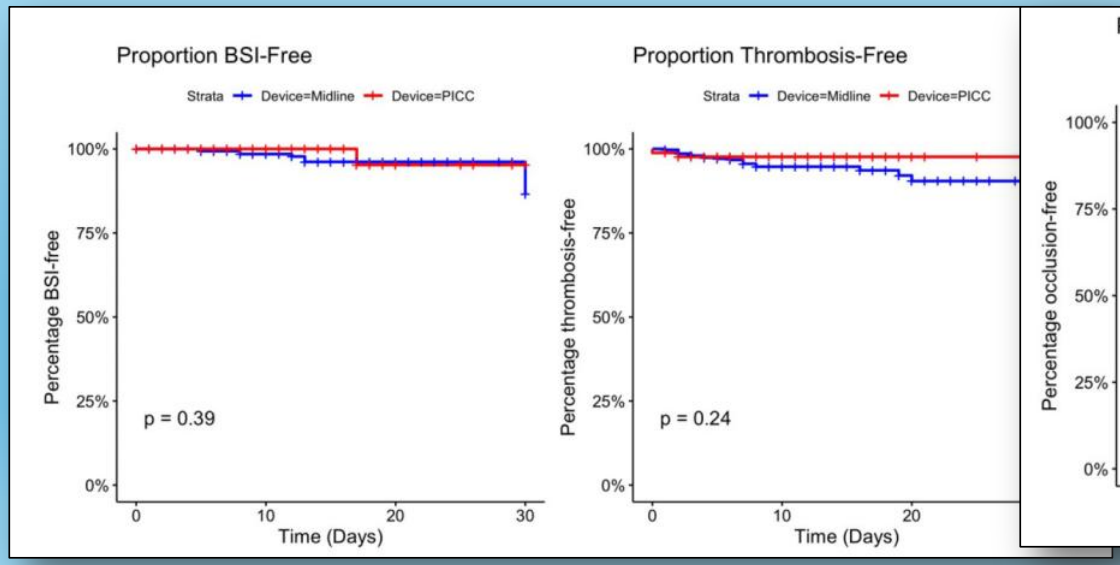
Concise Communication

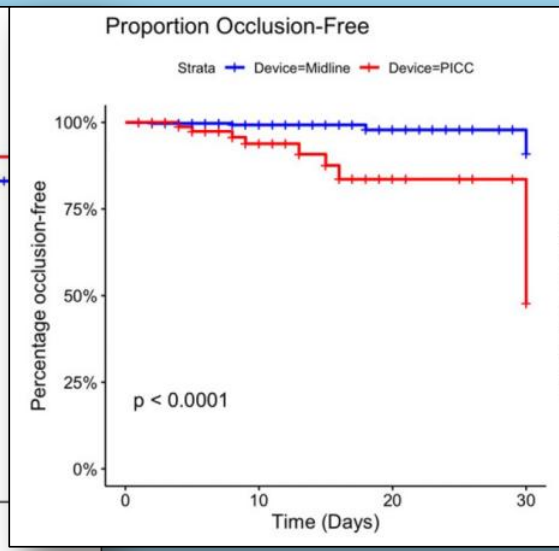
Comparison of complication types in patients receiving vesicant intravenous antimicrobials or vasopressors via midlines and peripherally inserted central catheters

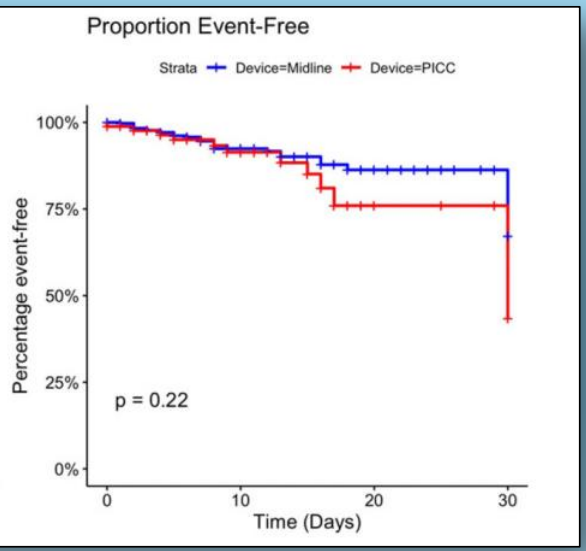
Bryan Grigg MD[1], Nishant Varghese BSc, BSN, RN[2], Christi Knapp BSN, RN-BC[2], Sabra L. Shay BSN, MPH[3], Geraldine Jones PhD, NPD-BC[2], James P. Herlihy MD[4], Prasad Manian MD MBBS[4], Bradley Lembcke MD MBA[2] and Mayar Al Mohajer MD, MBA, MPH[2,5]

Risultati

- Non differenze per Complicanze totali
- No differenze per CR-BSI
- No differenze per CRT
- Occlusioni maggiori nei PICC







Heart & Lung 60 (2023) 39–44

Contents lists available at ScienceDirect

Heart & Lung

journal homepage: www.heartandlung.com

The catheter-to-vein ratio at the tip level, not the catheter type, as a risk factor for a catheter failure. A retrospective comparative study of polyurethane midline and long peripheral catheters.

Adam FABIANI, MNS, RN[a,b], Marilena SANTORO, BNS, RN[a], Gianfranco SANSON, PhD, RN[c,*]

Table 2
Comparison between patients and cannulated vein characteristics according to the catheter outcome.

Variable	Catheter outcome		*p*-value
	Success	Failure	
Patient's age (years)	67.3 ± 11.8	73.6 ± 6.6	0.049
Patient's sex (male)	141 (62.4%)	7 (50.0%)	0.355
Undergoing aAg/aCo therapy	208 (92.0%)	11 (78.6%)	0.112
Cannulated vein			0.017
Basilic	155 (96.3%)	6 (3.7%)	
Brachial	54 (93.1%)	4 (6.9%)	
Cephalic	17 (81.0%)	4 (19.0%)	
Catheter-to-vein ratio > 45% (insertion)	10 (4.4%)	2 (14.3%)	0.149
Catheter-to-vein ratio > 45% (tip)*	3 (1.3%)	2 (14.3%)	0.029
Infusion of more than two different drugs	32 (14.2%)	5 (35.7%)	0.030
Infusion of moderate-high risk drugs	93 (41.2%)	8 (57.1%)	0.240

Data are described as mean ± standard deviation or number (percentage). aAg/aCo: antiaggregant/anticoagulant. *: $n = 239$.

Contents lists available at ScienceDirect

American Journal of Infection Control

journal homepage: www.ajicjournal.org

Major Article

The longer the catheter, the lower the risk of complications: Results of the HERITAGE study comparing long peripheral and midline catheters

Adam Fabian
Dario Calanc

Table 3
Variables associated with differences in catheter-failure rates

	Catheter-failure		*P* value
	No	Yes	
Patient characteristics			
Age (y)	70.2 ± 13.3	71.1 ± 13.6	.752
Sex (male)	145 (59.2%)	9 (37.5%)	.040
Charlson Comorbidity Index	3.3 ± 2.2	3.1 ± 2.4	.593
Department			
Cardiac surgery	131 (53.5%)	12 (50.0%)	.728
Cardiology	45 (18.4%)	6 (25.0%)	
Internal medicine	69 (28.2%)	6 (25.0%)	
Cannulated vein			
Basilic	156 (63.7%)	12 (50.0%)	.349
Brachial	60 (24.5%)	9 (37.5%)	
Cephalic	29 (11.8%)	3 (12.5%)	
Measures at the insertion level			
Catheter-to-vein ratio (%)	30.8 ± 9.7	31.8 ± 7.7	.620
Catheter-to-vein ratio > 33%	70 (28.6%)	11 (45.8%)	.079
Catheter-to-vein ratio > 45%	13 (5.3%)	1 (4.2%)	.810
Measures at the tip level			
Catheter-to-vein ratio (%)	21.5 ± 10.5	24.1 ± 11.7	.264
Catheter-to-vein ratio > 33%	27 (11.0%)	7 (29.2%)	.011
Catheter-to-vein ratio > 45%	8 (3.3%)	2 (8.3%)	.210
Average number of drugs infused per day			
Any medication	0.9 ± 0.7	1.3 ± 0.8	.021
High-risk medications only	0.2 ± 0.3	0.3 ± 0.4	.102

Original research article

JVA The Journal of Vascular Access

The Journal of Vascular Access
1–9
© The Author(s) 2025
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/11297298251387289
journals.sagepub.com/home/jva
Sage

The association of irritant administration via midline catheters with catheter-related complications: A longitudinal cohort study

Yi Zhang[1], Chang Liu[2], Jie Wang[1], Xiuzhu Cao[1], Yilin Chen[1], Yiyu Zhuang[1] Linfang Zhao[1],

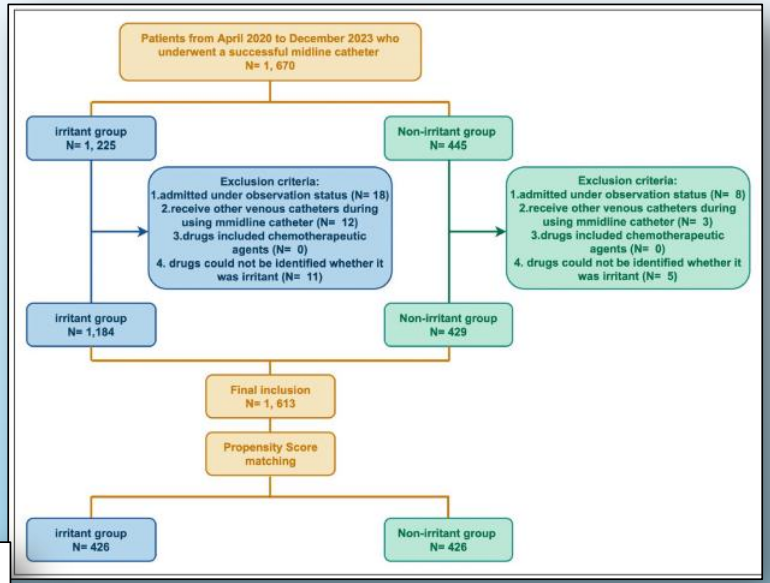


Table 2. Comparison of the incidence of catheter-related complications between the two groups.

Group	Number	Primary outcomes		Secondary outcomes			Catheter-related complication
		Catheter-associated thrombosis	Bleeding	Catheter occlusion	Exudate	Catheter dislodgement	
Irritants via MC	1184	8 (0.6%)	59 (5.0%)	41 (3.5%)	35 (3.0%)	25 (2.1%)	117 (9.9%)
Non-irritants via MC	429	2 (0.5%)	13 (3.0%)	9 (2.1%)	7 (1.6%)	7 (1.6%)	29 (6.8%)
χ^2		0.013	2.816	1.953	2.178	0.373	
p		0.909[a]	0.093	0.162	0.140	0.541	0.062[b]

omplications between the two groups after propensity score matching.

Group	Number	Primary outcomes		Secondary outcomes			Catheter-related complication
		Catheter-associated thrombosis	Bleeding	Catheter occlusion	Exudate	Catheter dislodgement	
Irritants via MC	426	3 (0.7%)	22 (5.2%)	11 (2.6%)	16 (3.8%)	12 (2.8%)	42 (9.9%)
Non-irritants via MC	426	2 (0.5%)	12 (2.8%)	9 (2.1%)	6 (1.4%)	7 (1.6%)	28 (6.6%)
χ^2		0.000	3.063	0.205	4.666	1.346	3.051
p		1.000[a]	0.080	0.651	0.052	0.246	0.105

Contents lists available at ScienceDirect

American Journal of Infection Control

journal homepage: www.ajicjournal.org

Major Article

The longer the catheter, the lower the risk of complications: Results of the HERITAGE study comparing long peripheral and midline catheters

Adam Fabiani MNS, RN [a,b], Nicola Aversana MNS, RN [c], Marilena Santoro RN [b], Dario Calandrino RN [d], Paolo Liotta RN [b], Gianfranco Sanson PhD, RN [e,*]

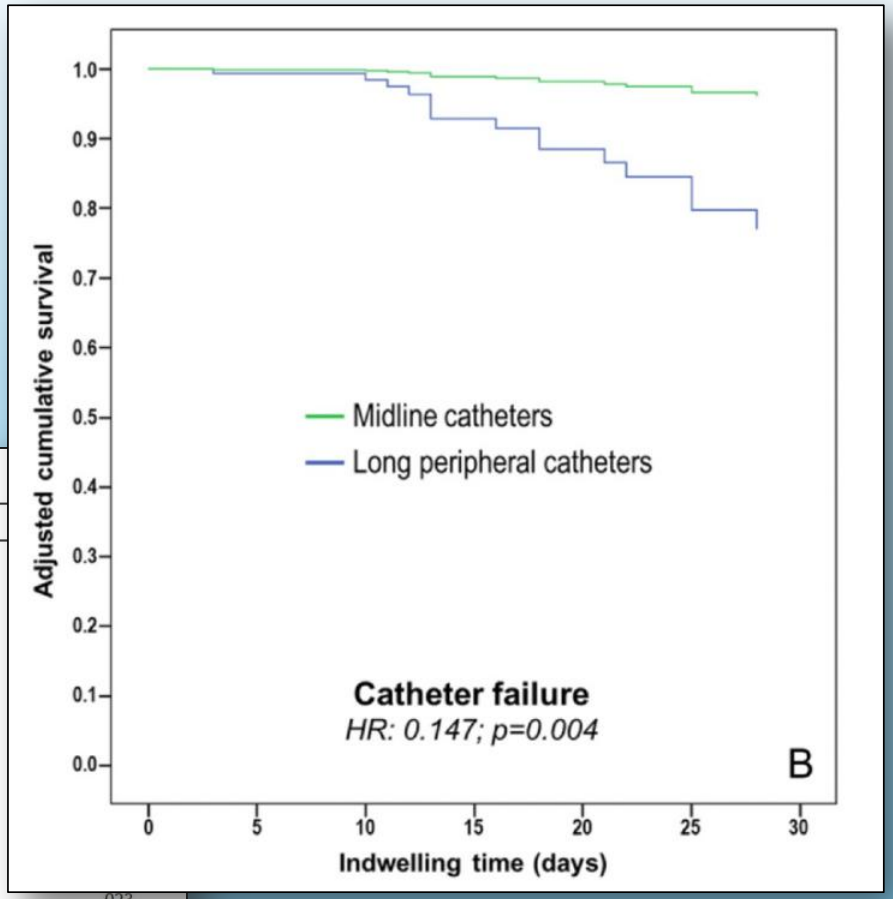


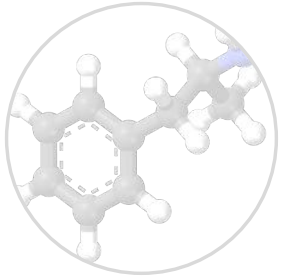
Table
General characteristics of the study population and differences according to the catheter type

	All catheters (n. 269)	LPCs (n. 138)	MCs (n. 131)	
Patient characteristics				
Age (y)	70.3 ± 13.3	72.3 ± 11.7	68.1 ± 14.5	
Sex (male)	154 (57.2%)	73 (52.9%)	81 (61.8%)	
Charlson Comorbidity Index	3.3 ± 2.2	3.2 ± 2.0	3.5 ± 2.4	
Department				
Cardiac surgery	143 (53.2%)	66 (47.8%)	77 (58.8%)	
Cardiology	51 (19.0%)	21 (15.2%)	30 (22.9%)	
Internal medicine	75 (27.9%)	51 (37.0%)	24 (18.3%)	
Cannulated vein				
Basilic	168 (62%)	75 (44.6%)	93 (55.4%)	
Brachial	69 (26%)	32 (46.4%)	37 (53.6%)	
Cephalic	32 (12%)	31 (96.9%)	1 (3.1%)	
Measures at the insertion level				
Inner caliber of the vein (mm)	4.7 ± 1.4	4.4 ± 1.4	5.0 ± 1.4	
Depth of the vein (mm)	11.0 ± 4.0	10.3 ± 3.8	11.6 ± 4.1	
Catheter-to-vein ratio (%)	30.9 ± 9.6	32.2 ± 10.5	29.5 ± 8.3	.023
Catheter-to-vein ratio > 33%	81 (30.0%)	51 (37.0%)	30 (22.9%)	.012
Catheter-to-vein ratio > 45%	14 (5.0%)	9 (6.5%)	5 (3.8%)	.318
Measures at the tip level				
Inner caliber of the vein (mm)	7.3 ± 2.8	5.9 ± 2.6	8.8 ± 2.3	<.001
Catheter-to-vein ratio (%)	21.8 ± 10.6	26.5 ± 12.4	16.7 ± 4.7	<.001
Catheter-to-vein ratio > 33%	34 (13.0%)	33 (23.9%)	1 (0.8%)	<.001
Catheter-to-vein ratio > 45%	10 (4.0%)	10 (7.2%)	0 (0.0%)	.002
Average number of drugs infused per day				
Any medication	1.0 ± 0.7	0.7 ± 0.5	1.3 ± 0.8	<.001
High-risk medications only	0.2 ± 0.3	0.1 ± 0.2	0.3 ± 0.4	<.001

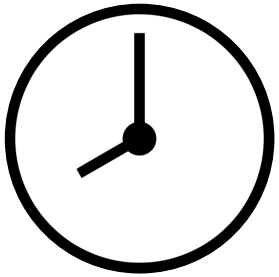
LPCs, long peripheral catheters; *MCs*, midline catheters.

Midline, or Long Peripheral Catheter: That is the question

Sede di inserzione



Farmaci



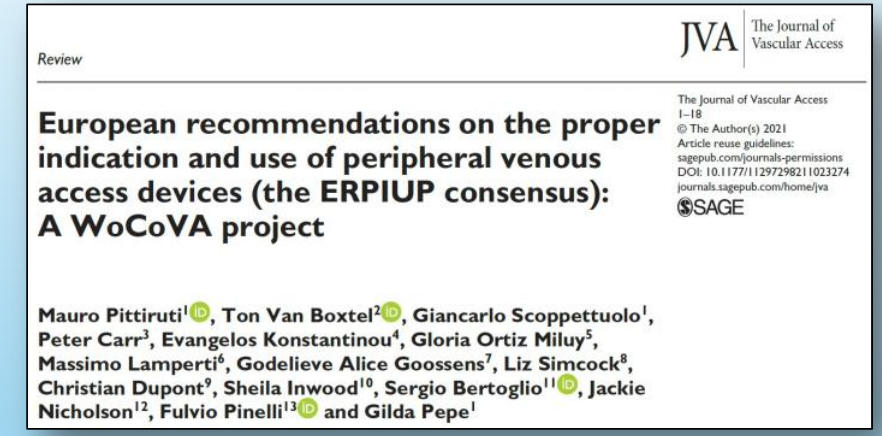
Durata attesa

In base alla durata?

LE BUONE PRATICHE PER GLI ACCESSI VASCOLARI

Venosi periferici	Agocannula	Agocannula lunga	Midline
Lunghezza cm	2-6	6-15	>15
Inserimento	Tradizionale	Tradizionale/Ecoguida	Ecoguida
Indicazione	Terapie 5-7 giorni e Patrimonio Venoso Superficiale Integro	Terapie fino a 29 giorni o Patrimonio Venoso Superficiale Esaurito	Terapie >30 giorni
Uso Extra Ospedaliero	No	Possibile	Sì

In base alla durata?



Review

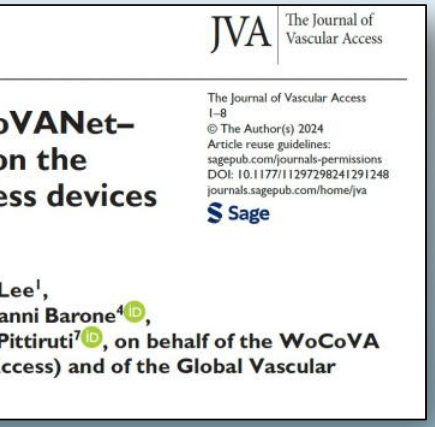
JVA The Journal of Vascular Access

European recommendations on the proper indication and use of peripheral venous access devices (the ERPIUP consensus): A WoCoVA project

The Journal of Vascular Access
1–18

DOI: 10.1177/1129729821023274
journals.sagepub.com/home/jva
SAGE

Mauro Pittiruti[1], Ton Van Boxtel[2], Giancarlo Scoppettuolo[1], Peter Carr[3], Evangelos Konstantinou[4], Gloria Ortiz Miluy[5], Massimo Lamperti[6], Godelieve Alice Goossens[7], Liz Simcock[8], Christian Dupont[9], Sheila Inwood[10], Sergio Bertoglio[11], Jackie Nicholson[12], Fulvio Pinelli[13] and Gilda Pepe[1]



Editorial

JVA The Journal of Vascular Access

The NAVIGATE project: A GloVANet–WoCoVA position statement on the nomenclature for vascular access devices

The Journal of Vascular Access
1–8

DOI: 10.1177/11297298241291248
journals.sagepub.com/home/jva
Sage

Matheus (Roland) van Rens[1], Robin van der Lee[1], Timothy R Spencer[2], Ton van Boxtel[3], Giovanni Barone[4], Alessandro Crocoli[5], Fulvio Pinelli[6], Mauro Pittiruti[7], on behalf of the WoCoVA Foundation (World Conference on Vascular Access) and of the Global Vascular Access Network (GloVANet)

The indications for specific PVADs are mainly based on the expected duration of treatment:

- *SPCs are appropriate for emergency and/or short duration access (24–48 h)*
- *"integrated" SPCs are appropriate for non-emergency access, when expected duration is 2–7 days*
- *LPCs are appropriate in DIVA patients, or when expected duration is 1–4 weeks*
- *MCs are appropriate when expected duration >4 weeks.*

Table 2. Main differences between long peripheral catheters (LPC) and midline catheters (MC).

	LPC	MC
Design		
Length	6–15 cm	>15 cm
Technique of insertion		
Veins chosen for cannulation	Superficial and deep veins of forearm and arm	Deep veins of the arm
Technique of venipuncture	Direct venipuncture, or ultrasound guided venipuncture	Ultrasound guided venipuncture
Technique of catheter insertion	Catheter over needle, or catheter over guidewire (simple Seldinger technique)	Catheter through introducer (modified Seldinger technique)
Tunneling, if required	No	Yes
Position of the tip	Veins of the upper limb	Axillary vein (thoracic tract) or subclavian vein
Subcutaneous anchorage, if required	No	Yes
Performance		
Blood sampling	No	Yes
Expected duration	1–3 weeks	Months
Complications		
Risk of dislodgment	High	Low
Local thrombophlebitis	Frequent	Very rare
Risk of malfunction	High	Low

Contents lists available at ScienceDirect

Thrombosis Research

journal homepage: www.elsevier.com/locate/thromres

Review Article

Complications associated to midline- and long peripheral catheters in adults. Systematic review of literature and proposal for a standardized model for data collection

Adam Fabiani [a,b], Nicola Aversana [c], Marilena Santoro [b], Gianfranco Sanson [d,*]

Midline Catheter :

Durata media ~ 26 giorni; Max 312

Long Peripheral Catheter:

Durata media ~ 15giorni; Max 76

Midline-catheters: characteristics of the devices and major complications as reported by studies included in the review.

Author, Year	Catheter characteristics	Author's catheter classification	Dwelling days mean/median [max][a]	Catheter failure[b] (method)	CR-BSI[b] (method)	S-CRT[b] (method)
Bahl, 2021	4 Fr/20 cm (PUR-AT)	Midline-catheter	11.2 ± 6.6 [nd]	20.8 (PR-UM/C)	0 (NHSN)	4.7 (US+Co)
Campagna, 2018	4–5 Fr/20–25 cm (nd)	Midline-catheter	26 (NA) [273]	2.5 (R-AE)	NA	0.9 (US+Co)
Fabiani, 2020	18 G/18 cm (PET)	Long-peripheral-catheter	16 ± 10.8 [48]	10.6 (PR-C)	1.3 (DTP/TC)	1.3 (US+Co)
Fabiani, 2020	4 Fr/20 cm (PUR)	Midline-catheter	26 ± 22.6 [153]	6.3 (PR-C)	0.5 (DTP/TC)	1.9 (US+Co)
Fabiani, 2023	4 Fr/20 cm (PUR)	Midline-catheter	25.7 ± 20.4 [125]	3.4 (PR-C)	0 (DTP/TC)	0.9 (US+Co)
Frondizi, 2023	4–5 Fr/20–25 cm (PUR)	Midline-catheter	12.4 ± 11.2 [nd]	NA	3.2 (DTP)	1.1 (US)
Lisova, 2018	4 Fr/20 cm (PUR)	Midline-catheter	10 (1–112) [112]	NA	NA	3.4 (US+Co + CD)
Locatello, 2022	4–5 Fr/20–25 cm (PUR)	Midline-catheter	13.1 ± 7.7 [nd]	NA	0.3 (DTP/TC)	0.9 (US+Co)
Tomàs-Lòpez, 2022	4 Fr/30 cm (PUR)	Midclavicular-catheter	21.8 ± 24.3 [312]	6.0 (UR)	0.2 (DTP/TC)	0.4 (US+Co)

Long-peripheral-catheters: characteristics of the devices and major complications as reported by studies included in the review.

Author, Year	Catheter characteristics	Author's catheter classification	Dwelling days mean/median [max][a]	Catheter failure[b] (method)	CR-BSI[b] (method)	S-CRT[b] (method)
Bahl, 2021	4.5 Fr/15 cm (PUR-AT-AM)	Midline-catheter	10.1 ± 6.6 [NA]	22.8 (PR-UM/C)	0 (NHSN)	5.7 (US+Co)
Fabiani, 2020	20–18 G/8–10 cm (PET)	Long-peripheral-catheter	11 ± 8.9 [54]	15.9 (PR-C)	0 (DTP/TC)	1.2 (US+Co)
Fabiani, 2023	18 G/10 cm (PUR)	Long-peripheral-catheter	17.1 ± 12.3 [74]	5.1 (PR-C)	1,0 (DTP/TC)	3.1 (US+Co)
Jeon, 2022	20–18 G/8–10 cm (PUR)	Midline-catheter	16.8 ± 13.5 [76]	26 (PR-C/NC)	1,0 (BC/TC + RS)	0.5 (US)
Johnson, 2022	10 cm (PUR)	Midline-catheter	(11; 5.5–19.5) [NA]	12.8 (PR-C)	0 (BC[c] + TC/DTP+ NOI)	0.6 (US/V)
Jones, 2022	20 G/8–10 cm (PUR)	Midline-catheter	8 ± NA [38]	18.3 (PR-C)	NA	0.6 (US)
Bundgaard M, 2020	20–18 G/10 cm (PUR)	Midline-catheter	(8; *0–41*) [41]	71.8 (PR-C)	0 (BC/TC)	2.1 (US)
Marsh, 2022	20–18 G/8–10 cm (PUR)	Midline-catheter	(4.9; 3.2–8) [NA]	69.3 (APIF)	0 (NHSN)	5.3 (US)
Nielsen, 2021	20–18 G/10 cm (PUR)	Midline-catheter	(9; *0–60*) [60]	48.9 (PR)	0 (BC/TC + NOI)	0.8 (US)

American Journal of Infection Control

Contents lists available at Sc

American Journal of Infe

journal homepage: www.a

ELSEVIER

Major Article

Midline or long peripheral catheters in difficult v
A comparative study in patients with acute card

Adam Fabiani MSN, RN [a], Valentina Eletto CNS, RN [a], Lorella D
Gianfranco Sanson PhD, RN [b,*]

Contents lists available at ScienceDirect

Heart & Lung

journal homepage: www.heartandlung.com

ELSEVIER

The catheter-to-vein ratio at the tip level, not the catheter type, as a factor for a catheter failure. A retrospective comparative study of polyurethane midline and long peripheral catheters.

Adam FABIANI, MNS, RN [a,b], Marilena SANTORO, BNS, RN [a], Gianfranco SANSON, PhD, RN

Contents lists available at ScienceDirect

American Journal of Infection Control

journal homepage: www.ajicjournal.org

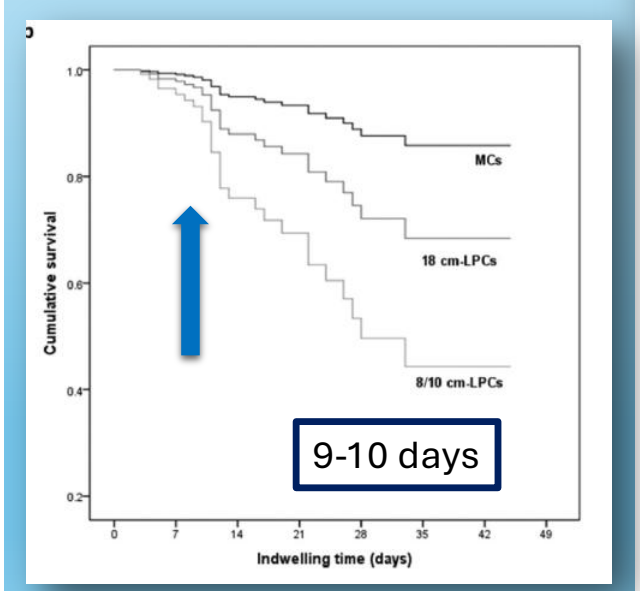
ELSEVIER

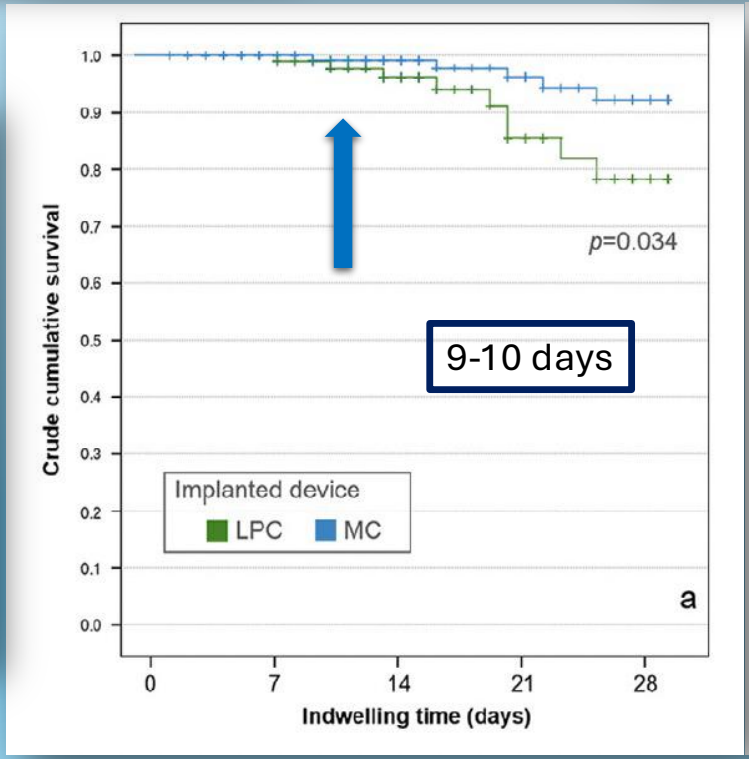
AJIC American Journal of Infection Control

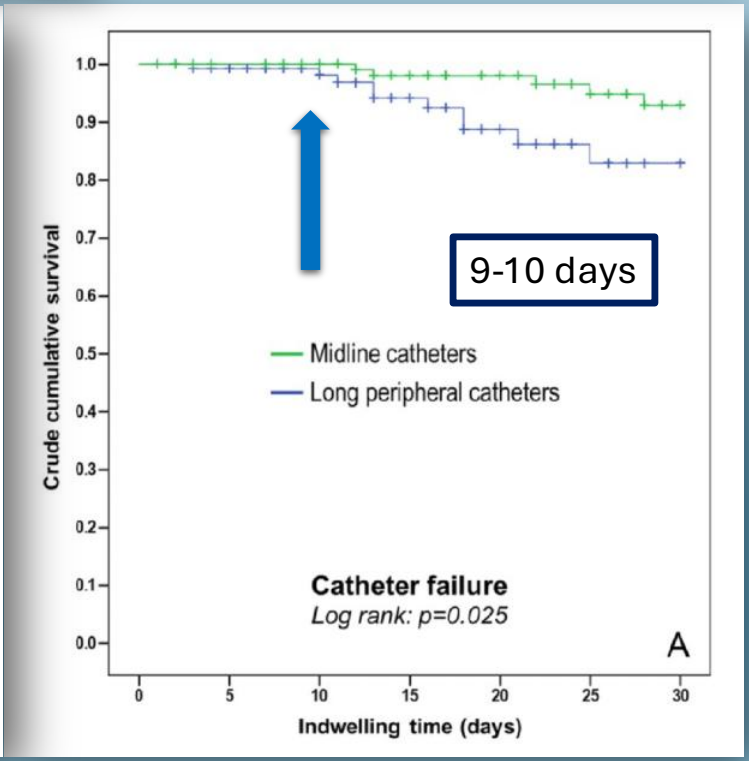
Major Article

The longer the catheter, the lower the risk of complications: Results of the HERITAGE study comparing long peripheral and midline catheters

Adam Fabiani MNS, RN [a,b], Nicola Aversana MNS, RN [c], Marilena Santoro RN [b], Dario Calandrino RN [d], Paolo Liotta RN [b], Gianfranco Sanson PhD, RN [e,*]

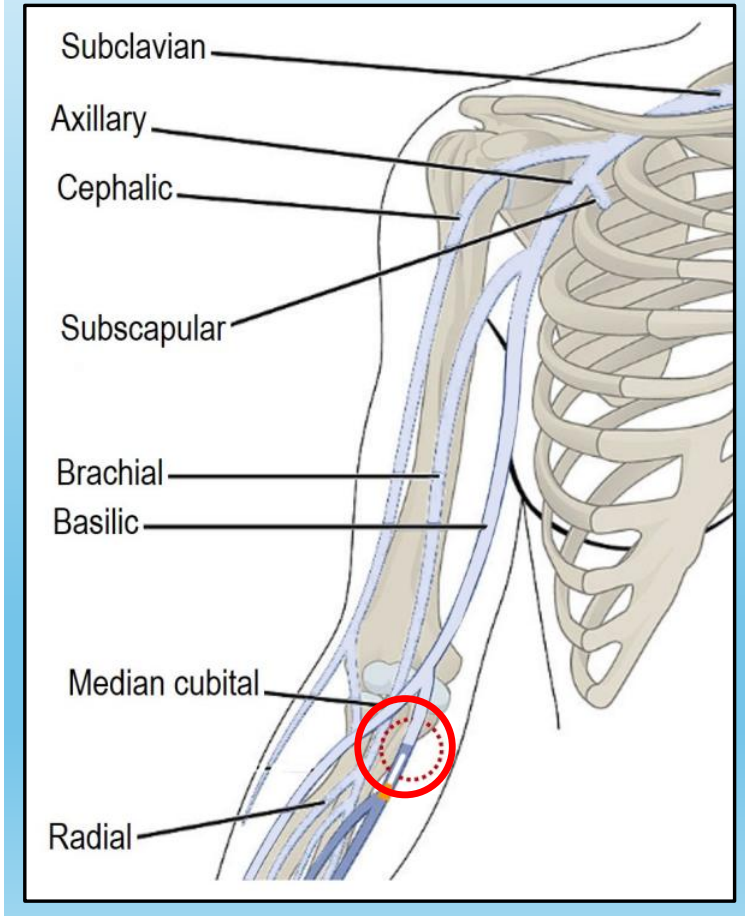




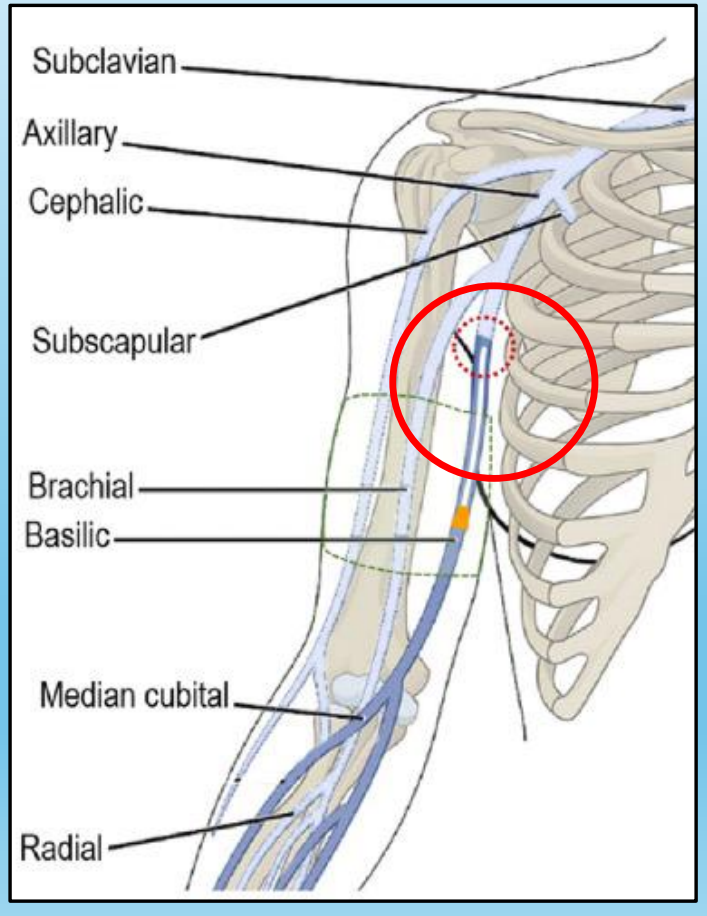


Posizione della punta?

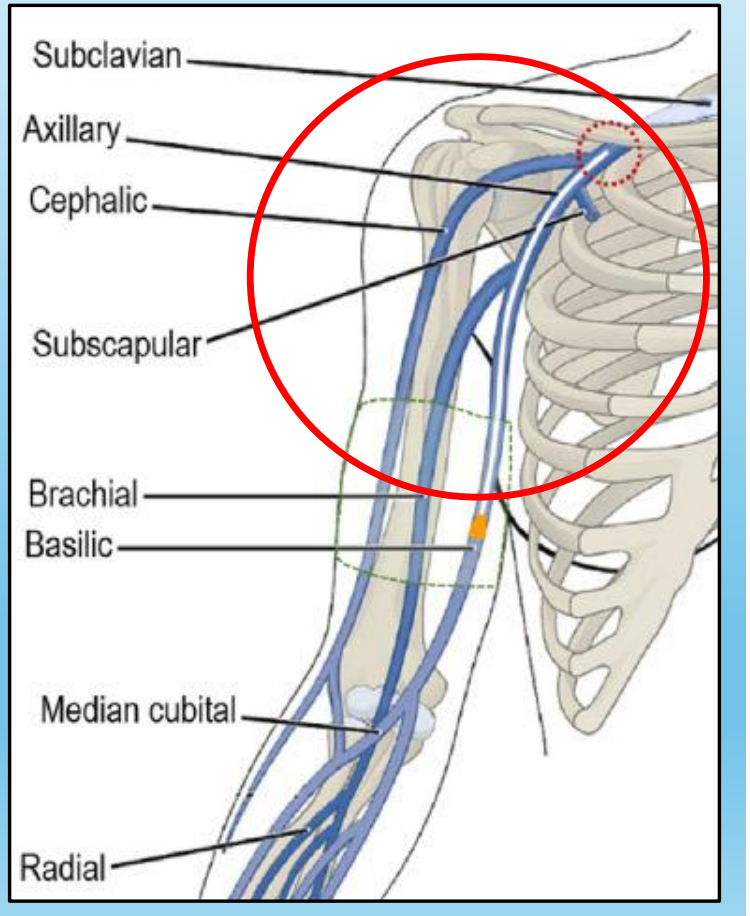
Short Peripheral Catheter



Long Peripheral Catheter



Midline Catheter



Take home a message!

PICC DAY 2025

1. Ampia e diffusa errata classificazione e nomenclatura nella letteratura scientifica → errata attribuzione delle complicanze;
2. Probabilmente la sede ottimale dei LPC e dei MC è sempre la - green zone di Dawson. Scegliendo l'avambraccio esclusivamente per SPC;
3. La somministrazione di farmaci irritanti attraverso i MC è oggetto di discussione (ancora scarsa letteratura a disposizione), probabilmente permissiva in selezionati contesti clinici e per tempi ristretti;
4. Probabilmente i MC sono la migliore soluzione per pazienti che necessitano di piani terapeutici più lunghi e complessi, riservando i LPC per pazienti DIVA con terapie a breve termine (max 7-10 gg).

CUAV - TRIESTE
Centro Unico Accessi Vascolari