

Gemelli



Fondazione Policlinico Universitario A. Gemelli
Università Cattolica del Sacro Cuore

UN NUOVO PROGETTO WOCOVA- GLOVANET: UN *POSITION STATEMENT* SULLA NOMENCLATURA DEI DISPOSITIVI PER ACCESSO VENOSO

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UN PROGETTO WOCOVA-GLOVANET

Editorial

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

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2024

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Timothy R Spencer² , Ton van Boxtel³ , Giovanni Barone⁴ ,
Alessandro Crocoli⁵ , Fulvio Pinelli⁶ , Mauro Pittiruti⁷ , on behalf of the WoCoVA
Foundation (World Conference on Vascular Access) and of the Global Vascular
Access Network (GloVANet)**

C'ERA BISOGNO DI UNA STANDARDIZZAZIONE DELLA NOMENCLATURA DEGLI ACCESSI VENOSI?

- Assolutamente sì
- Facciamo alcuni esempi...



ALCUNI ESEMPI

Terminologia ambigua/non condivisa nell'indicare gli accessi venosi periferici:

- 1) Molti lavori (e linee guida!!!) parlano di PIVC (*peripheral intravenous catheters*) riferendosi in realtà soltanto alle agocannule, trascurando altri dispositivi di accesso venoso periferico (mini-midline e midline).
- 2) Quasi tutti i lavori provenienti dagli USA utilizzano il termine '*midline*' per indicare qualunque dispositivo periferico lungo più di 6 cm, accumulando quindi i *mini-midline* (cateteri periferici lunghi) e i *midline*, benché questi siano dispositivi molto differenti tra loro.



	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



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ALCUNI ESEMPI

Terminologia ambigua/non condivisa nell'indicare gli accessi venosi centrali:

- 1) Molti lavori (e linee guida!!!) ancora parlano di CVC (*central venous catheters* = *cateteri venosi centrali*) riferendosi in realtà soltanto ai CICC, trascurando altri dispositivi di accesso venoso centrale (PICC, FICC, port)
- 2) Molti lavori neonatali utilizzano per i cateteri epicutaneo-cava (ECC) il termine 'PICC', così da confondere tali dispositivi – esclusivamente neonatali – con i PICC ecoguidati utilizzati nel bambino e nell'adulto, benché si tratti di dispositivi molto differenti tra loro.



	ECC (n-PICC)	PICC
Patient population	Neonates	Children and adults
Design		
Caliber	1–2.7 Fr	3–6 Fr
Power injectability	No	Yes
Technique of insertion		
Vein chosen for cannulation	Any superficial vein of the upper limb, lower limb, or scalp	Veins of the arm (basilica, brachial, cephalic)
Technique of venipuncture	Direct puncture of visible veins	Ultrasound guided venipuncture
Technique of catheter insertion	Catheter through needle, or catheter through cannula	Catheter through introducer (modified Seldinger technique)
Tunneling, if required	No	Yes
Subcutaneous anchorage, if required	No	Yes
Performance		
Expected flow	Low	High
Blood sampling	No	Yes
Blood transfusions	No	Yes
Hemodynamic monitoring	No	Yes
Expected duration	1–2 weeks	Months
Complications		
Risk of lumen occlusion	High	Low
Risk of dislodgment	High	Low
Local thrombophlebitis	Frequent	Very rare

	ECC (n-PICC)	PICC
Patient population	Neonates	Children and adults
Design		
Caliber	1–2.7 Fr	3–6 Fr
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ALCUNI ESEMPI

Terminologia inappropriata nell'indicare gli accessi venosi centrali:

- 1) Quasi tutti i lavori provenienti dagli USA utilizzano il termine '*tunneled catheters*' dando per scontato (a) che si tratti di cateteri cuffiati, (b) che si tratti di cateteri venosi centrali, (c) che si tratti di CICC, (d) che si tratti di dispositivi in silicone. Tutte assunzioni arbitrarie, considerando la evoluzione degli accessi venosi dell'ultima decade.
- 2) Nella pratica clinica e – purtroppo – anche in molti lavori, dilaga la cattiva abitudine di indicare i dispositivi con il nome commerciale, anche quando si tratti di DAV di altra ditta.



ALCUNI ESEMPI

‘*port-a-cath*’ per indicare i port di qualunque marca

‘*hickman*’ ... per indicare cateteri tunnellizzati cuffiati di qualunque marca

‘*ledercath*’ ... per indicare cateteri *mini-midline* di qualunque marca

‘*vas-cath*’ per indicare cateteri per dialisi non tunnellizzati di qualunque marca

‘*arrow*’ per indicare CICC non tunnellizzati di qualunque marca

.... E così via.



QUINDI: NECESSITÀ DI FAR CHIAREZZA E DI DEFINIRE UNA TERMINOLOGIA APPROPRIATA

- Progetto proposto da due esperti WoCoVA (R.van Rens e R.van der Lee), approvato dai principali coordinatori di WoCoVA/GloVANet (T.Spencer, T.van Boxtel, M.Pittiruti), con il coinvolgimento di tre esperti WoCoVA con specifiche competenze negli accessi venosi nel neonato (G.Barone), nel bambino (A.Crocoli) e nell'adulto (F.Pinelli).
- Metodo Delphi modificato (con riunioni sia in remoto che in presenza), con votazione finale unanime per tutte le definizioni.



PREMESSA: DEFINIZIONE APPROPRIATA DI DAV CENTRALE VS. DAV PERIFERICO

DAV centrale = qualunque dispositivo venoso abbia la punta in vena cava superiore, atrio destro, o vena cava inferiore

(anche - se a seconda del tipo di paziente, del dispositivo, e dell'utilizzo previsto – determinate posizioni della punta saranno più raccomandabili di altre)



ALTRA PREMESSA: CLASSIFICAZIONE APPROPRIATA DEI DAV CENTRALI

CICC – cateteri centrali ad inserzione cervico-toracica

PICC – cateteri centrali ad inserzione brachiale

FICC – cateteri centrali ad inserzione femorale

(classificazione già proposta anni fa dal WoCoVA e dal GAVeCeLT e riportata anche nelle linee guida ESA del 2020)



GUIDELINES**European Society of Anaesthesiology guidelines on peri-operative use of ultrasound-guided for vascular access (PERSEUS vascular access)**

Massimo Lamperti, Daniele Guerino Biasucci, Nicola Disma, Mauro Pittiruti, Christian Breschan, Davide Vailati, Matteo Subert, Vilma Traškaitė, Andrius Macas, Jean-Pierre Estebe, Regis Fuzier, Emmanuel Boselli and Philip Hopkins

2020

- (1) *Centrally inserted central line* is a central venous catheter inserted into a deep vein in the supraclavicular or infraclavicular area.
- (2) *Peripherally inserted central line* is a central venous catheter inserted into a deep vein of the arm (usually the basilic vein but also the brachial veins).
- (3) *Femorally inserted central line* is a central venous catheter inserted into a deep vein at the groin (either the common or the superficial femoral vein).

ALTRA PREMESSA: CLASSIFICAZIONE APPROPRIATA DEI DAV PERIFERICI

DAV periferici = classificati come **cannule periferiche corte** (short peripheral cannulas - SPC), **cateteri periferici lunghi** o mini-midline (long peripheral cannulas - LPC) e **cateteri Midline** o midclavicular (midline catheters - MC

(classificazione che il WoCoVA aveva già proposto nella consensus ERPIUP del 2021)



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

Mauro Pittiruti¹, Ton Van Boxtel², Giancarlo Scoppettuolo¹, Peter Carr³, Evangelos Konstantinou⁴, Gloria Ortiz Miluy⁵, Massimo Lamperti⁶, Godelieve Alice Goossens⁷, Liz Simcock⁸, Christian Dupont⁹, Sheila Inwood¹⁰, Sergio Bertoglio¹¹, Jackie Nicholson¹², Fulvio Pinelli¹³ and Gilda Pepe¹

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2021

Panel's recommendations:

Peripheral VADs are defined as catheters whose tip is located in the venous system but outside the superior vena cava, the right atrium and the inferior vena cava.

On the basis of their length, they can be classified as follows:

- (a) short peripheral catheters (SPC) (<6 cm): SPC may be further classified as “simple” or “integrated”, based on their design and material;*
- (b) long peripheral catheters (LPC) (6–15 cm);*
- (c) midline catheters or “midclavicular” (MC) (>15 cm).*

ULTIMA IMPORTANTE PREMESSA

- Necessità di distinguere i DAV utilizzati nel neonato (che hanno caratteristiche del tutto speciali) e i DAV utilizzati nei bambini e nei pazienti adulti

RISULTATI

La terminologia proposta dal panel di esperti WoCoVA/GloVANet è stata presentata in forma riassuntiva come tabelle.

Dispositivi di accesso venoso periferico nell'adulto e nel bambino

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

Dispositivi di accesso venoso periferico nell'adulto e nel bambino

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Dispositivi di accesso venoso centrale nell'adulto e nel bambino

CVAD—central venous access devices

PICC	Peripherally inserted central catheters inserted by ultrasound-guided venipuncture of deep veins of the arm (basilic vein, brachial veins, brachial tract of the axillary vein) or of the cephalic vein at the arm.
CICC	Centrally inserted central catheter inserted by ultrasound-guided venipuncture of deep veins of the supra-clavicular area (internal jugular vein, brachiocephalic vein, subclavian vein, deep tract of the external jugular vein) or of the infra-clavicular area (thoracic tract of the cephalic vein, thoracic tract of the axillary vein)
FICC	Femorally inserted central catheter inserted by ultrasound-guided venipuncture of veins of the lower limb (common femoral vein, superficial femoral vein, saphenous vein)
TIVAD	Totally implantable venous access device (or port) - Chest ports, a.k.a. CICC ports - Femoral ports, a.k.a. FICC port - Brachial ports, a.k.a. PICC-ports, a.k.a. arm ports
Tunneled CVAD	
Tc	- Tunneled, and cuffed: Tc-CICC, Tc-PICC, Tc-FICC
Tnc	- Tunneled, but non-cuffed: Tnc-CICC, Tnc-PICC, Tnc-FICC

Dispositivi di accesso venoso centrale nell'adulto e nel bambino

CVAD ~~central venous access devices~~

- PICC** Peripherally inserted central catheters
inserted by ultrasound-guided venipuncture of deep veins of the arm (basilic vein, brachial veins, brachial tract of the axillary vein) or of the cephalic vein at the arm.
- CICC** Centrally inserted central catheter
inserted by ultrasound-guided venipuncture of deep veins of the supra-clavicular area (internal jugular vein, brachiocephalic vein, subclavian vein, deep tract of the external jugular vein) or of the infra-clavicular area (thoracic tract of the cephalic vein, thoracic tract of the axillary vein)
- FICC** Femorally inserted central catheter
inserted by ultrasound-guided venipuncture of veins of the lower limb (common femoral vein, superficial femoral vein, saphenous vein)

- TIVAD** Totally implantable venous access device (or port)
- Chest ports, a.k.a. CICC ports
 - Femoral ports, a.k.a. FICC port
 - Brachial ports, a.k.a. PICC-ports, a.k.a. arm ports

Tunneled CVAD

- Tc** - Tunneled, and cuffed: Tc-CICC, Tc-PICC, Tc-FICC
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Dispositivi di accesso venoso centrale nell'adulto e nel bambino

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Tc	- Tunneled, and cuffed: Tc-CICC, Tc-PICC, Tc-FICC
Tnc	- Tunneled, but non-cuffed: Tnc-CICC, Tnc-PICC, Tnc-FICC

Dispositivi di accesso venoso periferico nel neonato

PVAD—peripheral venous access devices

n-SPC

Neonatal short peripheral catheter

- catheters with a standard length of <2 cm

n-LPC

Neonatal long peripheral catheter (a.k.a. mini-midline or short midline)

- catheters with a length from 2 to 6 cm
- tip located in the veins of the arm or leg

Dispositivi di accesso venoso periferico nel neonato

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Dispositivi di accesso venoso centrale nel neonato

CVAD—central venous access devices

UVC

Umbilical venous catheter

- tip located at the junction between IVC and RA

ECC/n-PICC

Epicutaneo-cava catheter or neonatal peripherally inserted central catheter

- for ECC/n-PICC coming through the SVC, the tip may be located (a) in the lower third of the SVC, (b) at the junction between the SVC and RA, (c) in the upper third of the RA
- for ECC/n-PICC coming through the IVC, the tip may be located (a) in the subdiaphragmatic IVC (below the hepatic vein but above the renal vein), or (b) at the junction between IVC and RA.

CICC

Centrally inserted central catheter

- inserted by ultrasound-guided venipuncture of deep veins of the supra-clavicular area (mainly the internal jugular vein or the brachiocephalic vein)
- tip is located (a) at the junction between SVC and RA or (c) in the upper third of the RA

FICC

Femorally inserted central catheter;

- ultrasound-guided venipuncture of deep veins of the groin (common femoral vein)
- tip may be located (a) in the subdiaphragmatic IVC (below the hepatic vein but above the renal veins), or (b) at the junction between IVC and RA

Tunneling in CICC, FICC

Tc

- Tunneled, cuffed

Tnc

- Tunneled, non-cuffed



Dispositivi di accesso venoso centrale nel neonato

CVAD—central venous access devices

UVC	Umbilical venous catheter - tip located at the junction between IVC and RA
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CICC	Centrally inserted central catheter - inserted by ultrasound-guided venipuncture of deep veins of the supra-clavicular area (mainly the internal jugular vein or the brachiocephalic vein) - tip is located (a) at the junction between SVC and RA or (c) in the upper third of the RA
FICC	Femorally inserted central catheter; - ultrasound-guided venipuncture of deep veins of the groin (common femoral vein) - tip may be located (a) in the subdiaphragmatic IVC (below the hepatic vein but above the renal veins), or (b) at the junction between IVC and RA
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Dispositivi di accesso venoso centrale nel neonato

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CICC

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Femorally inserted central catheter;

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Tunneling in CICC, FICC

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Tnc

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OVVIAMENTE UNA DEFINIZIONE UNIVOCA DEL DISPOSITIVO PREVEDE ANCHE ALTRI DETTAGLI

- il **calibro** del DAV: diametro esterno in French ($3 \text{ Fr} = 1 \text{ mm}$) o l'area interna di ogni lume (Gauge);
- il numero di **lumi**;
- la **lunghezza** effettiva del catetere (tratto intravascolare ed extravascolare);
- il **materiale** del catetere: la maggior parte dei PDAV è realizzata in poliuretano (PUR), politetrafluoretilene (PTFE) o poli-etero-blocco-ammide (PEBA); i CDAV sono realizzati in PUR o silicone;
- il materiale e le dimensioni del **reservoir**, nel caso dei TIVAD;
- la '**power injectability**' del DAV;
- la presenza/assenza di **attività antimicrobica o antitrombotica**;
- altre **caratteristiche strutturali** che rendono il DAV appropriato per scopi molto specifici (dialisi, ECMO, ecc.).



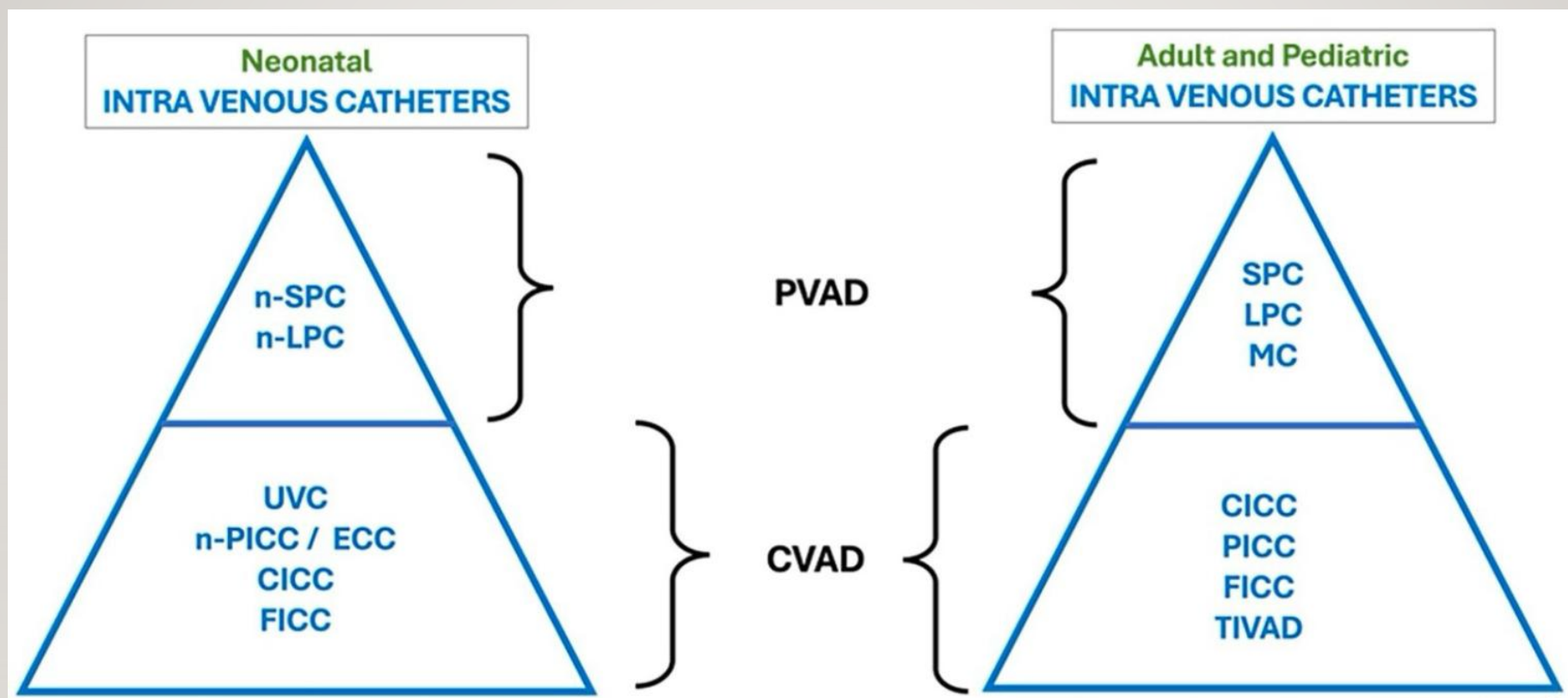
CONCLUSIONI

La standardizzazione della terminologia è utile:

- Dal punto di vista **clinico**
 - Migliore trasmissioni di informazioni tra medici/infermieri
- Dal punto di vista **scientifico**
 - Possibilità di comparare studi clinici diversi senza fraintendimenti
- Dal punto di vista **didattico**
 - Per insegnare/imparare in modo più semplice ed efficace



Una terminologia da adottare sia nella pratica clinica che nei lavori scientifici che nelle attività educazionali



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