

Una rivisitazione della Consensus GAVeCeLT 2022 sull'accesso venoso nei pazienti disturbati della coagulazione o in trattamento con anticoagulanti o antiaggreganti

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Management of antithrombotic treatment and bleeding disorders in patients requiring venous access devices: A systematic review and a GAVeCeLT consensus statement

Maria Giuseppina Annetta¹, Sergio Bertoglio² ,
Roberto Biffi³ , Fabrizio Brescia⁴ , Igor Giarretta⁵,
Antonio La Greca¹, Nicola Panocchia⁶, Giovanna Passaro⁷ ,
Francesco Perna⁸, Fulvio Pinelli⁹ , Mauro Pittiruti¹ ,
Domenico Prisco¹⁰, Tommaso Sanna⁸ and Giancarlo Scoppettuolo¹

A panel of experts was identified, consisting of surgeons, intensivists, anesthetists, cardiologists, vascular medicine experts, nephrologists, infective disease specialists, and thrombotic disease specialists.

Panelists were selected for their expertise in venous access devices, and/or in coagulation disorders, and/or as authors of relevant papers in this field.



TECHNIQUES AND PROCEDURES

Mechanical Complications of Central Venous Catheters

Table 2. Mechanical Complications by Catheter Insertion Site

	All Catheters (n = 385)	Subclavian (n = 218)	Internal Jugular (n = 40)	Femoral (n=127)	<i>P</i>
Complications	129 (33.2)	85 (39.0)	13 (32.5)	31 (24.4)	.022
Pneumothorax	5 (1.3)	5 (2.3)	0	N/A	.144
Arterial puncture	18 (4.7)	7 (3.2)	2 (5.0)	9 (7.1)	.257
Incorrect position	14 (3.6)	14 (6.4)	0	0	.004
Hemothorax	1 (0.3)	1 (0.5)	0	N/A	.361
Subcutaneous hematoma	3 (0.8)	1 (0.5)	0	2 (1.6)	.440
Death	1 (0.3)	0	1 (2.5)	0	.361
Failure to place	86 (22.3)	57 (26.1)	10 (25.0)	19 (15.0)	.051

Table 3. Mechanical Complications and Number of Attempts by Operator

	Intern (n = 76)	Resident (n = 233)	Fellow and Attending (n = 76)	<i>P</i>
Failure to place (%)	23 (30.3)	53 (22.7)	10 (13.2)	.076
Any complication (%)	30 (39.5)	83 (35.6)	14 (18.4)	.036
Complications not including failure to place (%)	7 (9.2)	30 (12.9)	4 (5.2)	.025



GUIDELINES AND STANDARDS

Guidelines for Performing Ultrasound Guided Vascular Cannulation: Recommendations of the American Society of Echocardiography and the Society of Cardiovascular Anesthesiologists

Christopher A. Troianos, MD, Gregg S. Hartman, MD, Kathryn E. Glas, MD, MBA, FASE, Nikolaos J. Skubas, MD, FASE, Robert T. Eberhardt, MD, Jennifer D. Walker, MD, and Scott T. Reeves, MD, MBA, FASE, for the Councils on Intraoperative Echocardiography and Vascular Ultrasound of the American Society of Echocardiography, Pittsburgh, Pennsylvania; Lebanon, New Hampshire; Atlanta, Georgia; New York, New York; Boston, Massachusetts; and Charleston, South Carolina

(J Am Soc Echocardiogr 2011;24:1291-318.)

Landmark (Blind) Technique

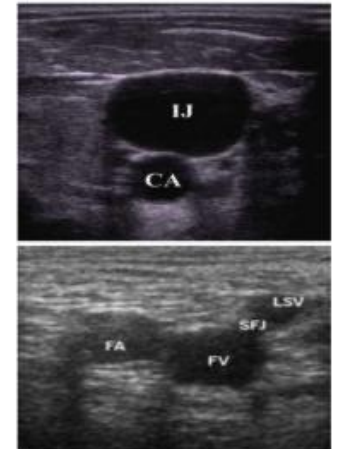
- Arterial puncture rate
- Internal Jugular
 - 6.3%-9.4%
- Subclavian Vein
 - 3.1%-4.9%
- Femoral Vein
 - 9.0%-15.0%



Troianos C (2011) J AM Soc Echocardiogr 24 (12): 1291-1318

Potential Arterial Puncture Rate: Ultrasound Guidance (IJ)

- Success rate of cannulation
 - 96% to 100%
- First attempt success rate
 - 54% to 73%
- Decreased needle advances
 - 2.8 attempts to 1.4 attempts
- Time to cannulation
 - 117 seconds to 61 seconds
- Arterial puncture rate
 - 8.43% to 1.39%



Troianos C (2011) J AM Soc Echocardiogr 24 (12): 1291-1318



Il rischio di sanguinamento associato all'impianto di CICC ha un'incidenza riportata del **0,5%-1,6%** nei pazienti adulti.

Per i TIVAD, ematomi minori della parete toracica nella tasca del reservoir sono stati riportati fino all'**8%** dei pazienti.

Nei cateteri da dialisi tunnellizzati, il rischio di sanguinamento può variare dallo 0,095% all'1,36% o arrivare fino al **5,6%**



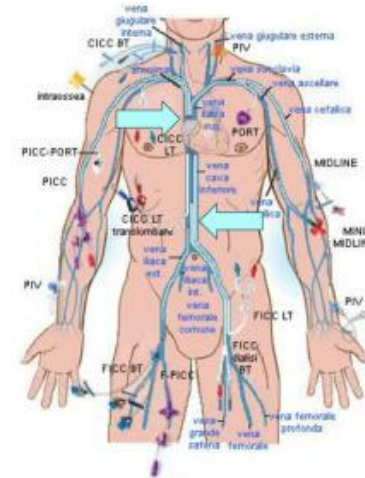
Scopo della consensus

- (1) Suddividere le procedure di impianto/rimozione di VAD (Venous Access Device) in base allo specifico rischio di sanguinamento?



Management of antithrombotic treatment and bleeding disorders in patients requiring venous access devices: A systematic review and a GAVeCeLT consensus statement

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Domenico Prisco¹⁰, Tommaso Sanna⁹ and Giancarlo Scoppettuolo¹



- a. **Minimally invasive** venous access procedure: insertion or removal of the following VADs: short peripheral cannulas; long peripheral catheters (mini-midline); midline catheters; non-tunneled PICCs; non-tunneled FICCs at mid-thigh (access to the superficial femoral vein)
- b. **Moderately invasive** venous access procedures— insertion or removal of the following VADs: non-tunneled CICC; non-tunneled FICCs at the groin (access to the common femoral vein); tunneled PICCs; nontunneled dialysis catheters
- c. **Highly invasive** venous access procedures— insertion or removal of the following VADs: tunneled CICC; tunneled FICCs; tunneled-cuffed dialysis catheters; ports (including PICC-ports, chest-ports, and femoral ports)



Popolazione ad incrementato rischio emorragico



Letter to the Editor

Prevalence of thrombocytopenia and thrombocytosis upon acute hospital admission to internal medicine units. A cross-sectional study in Denmark



Prognostic significance of a prolonged international normalized ratio in elderly patients in an internal medicine ward

Galina Plotnikov^{a,c}, Lior Bracha^{a,c}, Shimon Izhakian^{b,c}, Moshe Tishler^{a,c}, Oleg Gorelik^{b,c,*}



Population	Numbers of patients with platelet count	Thrombocytopenia, n (%)			
		Severe ($< 50 \times 10^9/L$)	Moderate ($50-99 \times 10^9/L$)	Mild ($100-149 \times 10^9/L$)	Any ($< 150 \times 10^9/L$)
Overall	274,148	1371 (0.50)	4823 (1.76)	13,819 (5.04)	18,642 (6.80)

Il 50% con
allungamento
spontaneo dell'INR





Contents lists available at ScienceDirect

Thrombosis Research

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



Thrombocytopenia in cancer patients

Howard A. Liebman*

Jane Ann Nohi Division of Hematology and Center for the Study of Blood Diseases, Keck School of Medicine of the University of Southern California, Los Angeles, CA

Journal of Thrombosis and Haemostasis, 11: 223–233

DOI: 10.1111/jth.12075

REVIEW ARTICLE

Coagulation and cancer: biological and clinical aspects

A. FALANGA, M. MARCHETTI and A. VIGNOLI

Division of Immunohematology and Transfusion Medicine, Ospedali Riuniti, Bergamo, Italy

Thrombocytopenia affects 10-25% of all cancer patients

abnormal bleeding represents an important cause of mortality, observed in about 10% of patients with [solid tumors](#) and in a higher proportion in patients with [hematologic malignancies](#)



N. C. Fisher
D. J. Mutimer**Central venous cannulation in patients
with liver disease and coagulopathy –
a prospective audit**

658 cannulations (subclavian, 352, and internal jugular, 306)..

A single episode of haemothorax leading to respiratory distress and requiring evacuation at thoracotomy but the patient died of multiorgan failure 2 days later

	Superficial haematoma (%)	Ooze (%)
INR > 5.0 (<i>n</i> = 137)	12.4	2.2
INR < 5.0 (<i>n</i> = 521)	5.6^a	2.3
Platelets < $\times 10^9/l$ (<i>n</i> = 146)	8.2	4.8
Platelets $\geq 50 \times 10^9/l$ (<i>n</i> = 512)	6.6	1.6^c
Regional heparin (<i>n</i> = 34)	5.9	11.8
No heparin (<i>n</i> = 624)	7.1	1.8^a
> 1 needle puncture (<i>n</i> = 79)	16.5	0
1 needle puncture only (<i>n</i> = 579)	5.7^a	2.6
Arterial puncture (<i>n</i> = 30)	16.7	0
No arterial puncture (<i>n</i> = 628)	6.5	2.4
Failed guidewire (<i>n</i> = 54)	31.5	0
Successful cannulation (<i>n</i> = 604)	4.8^b	2.5
Internal jugular site (<i>n</i> = 306)	11.4	1.6
Subclavian site (<i>n</i> = 352)	3.1^b	2.8



Invasive line placement in critically ill patients: do hemostatic defects matter?

T.G. DeLOUGHERY, J.M. LIEBLER, V. SIMONDS, AND S.H. GOODNIGHT

At least one defect in hemostasis was documented for 388 patients (41 %) before line placement, with 253 (27%) of these patients evidencing severe abnormalities.

Bleeding complication
4%

Table 4. *Bleeding complications*

Patient	Age	Diagnosis	Clinical service	Line*	Therapy	Anticoagulant	HDS†	Complication
1	76	Warfarin overdose	Medical	ART	No	None	9	Hematoma
2	52	Rheumatic heart disease	Medical	CVP	Yes	Warfarin	3	Hemothorax
3	17	Trauma	Trauma	CVP	Yes	None	9	Hemothorax
4	21	Hypotension	Medical	CVP	Yes	None	4	Hematoma
5	27	Respiratory failure	Medical	CVP	No	None	3	Hematoma

* ART = Arterial line; CVP = central venous pressure line.

† Hemostatic defect score.

Correction of the abnormalities was
attempted in 37% of patients
with no evidence of bleeding reduction

TRANSFUSION 1996;36:827-83 I .

XIII Congresso GAVeCeLT 



Central venous catheter placement in coagulopathic patients: risk factors and incidence of bleeding complications

Emma K. van de Weerd¹, Bart J. Biemond², Bart Baake¹, Ben Vermin¹, Jan M. Binnekade¹, Krijn P. van Lienden³ and Alexander P.J. Vlaar¹

Study Overview

- 22 studies analyzed (1 RCT, 21 observational)
- 13,256 total catheter placements
- 4,213 in coagulopathic patients

Key Findings

- Bleeding incidence: 0-32%
- Major bleeding complications rare
- **Severity of coagulopathy did not predict bleeding**
- **No benefit from prophylactic correction**

Safe Thresholds Suggested

- Platelet count: down to $20 \times 10^9/L$
- INR: up to 3.0

Recommendations

- Use ultrasound guidance
- Experienced operator preferred
- Minimize insertion attempts
- Well-designed RCTs needed



Scopo della consensus

- (1) Suddividere le procedure di impianto/rimozione di VAD (Venous Access Device) in base allo specifico rischio di sanguinamento?
- (2) Definire la gestione appropriata del paziente con disturbi della coagulazione candidato all'inserimento/rimozione di un VAD?



Type of venous access procedure

Minimally invasive (all peripheral VADs, nontunneled PICCs, nontunneled FICCs at mid-thigh)

Moderately invasive (nontunneled CICCs, nontunneled FICCs at the groin, tunneled PICCs, nontunneled dialysis catheters)

Highly invasive (tunneled CICCs, tunneled FICCs, tunneled-cuffed dialysis catheters, ports and PICC-ports)

Bleeding disorder

PT/INR > 1.5 and/or
aPTT ratio > 1.3

No contraindication

Relative contraindication (see
text)

Absolute contraindication

Platelet < 50 × 10⁹/L

No contraindication

Relative contraindication

Absolute contraindication (see text)

- Venous access procedures should be post-poned and scheduled electively, whenever possible, if an improvement of coagulation parameters or platelet count is expected.
- If an **emergency venous access is required, it should be carried out regardless of the bleeding risk**, but preferably choosing the least invasive device and least invasive technique.
- Both elective and emergency procedures should be performed by **well-trained operators**, choosing the safest puncture site (i.e., the best compressible site, such as the upper limb or groin or thigh).



Type of venous access procedure

	Minimally invasive (all peripheral VADs, nontunneled PICCs, nontunneled FICCs at mid-thigh)	Moderately invasive (nontunneled CICCs, nontunneled FICCs at the groin, tunneled PICCs, nontunneled dialysis catheters)	Highly invasive (tunneled CICCs, tunneled FICCs, tunneled-cuffed dialysis catheters, ports and PICC-ports)
Bleeding disorder			
PT/INR > 1.5 and/or aPTT ratio > 1.3	No contraindication	Relative contraindication (see text)	Absolute contraindication
Platelet < 50 × 10 ⁹ /L	No contraindication	Relative contraindication	Absolute contraindication (see text)

- Venous access procedures should be post-poned and scheduled electively, whenever possible, if an improvement of coagulation parameters or platelet count is expected.
- If an **emergency venous access is required, it should be carried out regardless of the bleeding risk**, but preferably choosing the least invasive device and least invasive technique.
- Both elective and emergency procedures should be performed by **well-trained operators**, choosing the safest puncture site (i.e., the best compressible site, such as the upper limb or groin or thigh).
- **The use of ultrasound guidance is mandatory.**
- The adoption of micro-puncture kits (i.e. 21 G echogenic needle, atraumatic 0.018" nitinol guidewire and microintroducer) may be advisable, so to minimize the risks associated with repeated punctures or accidental arterial puncture.



La prevalenza d'uso a livello nazionale è stata pari al 5,8%, 36,4% nei maschi con più di 85 anni,

Figura 3.5.1a Anticoagulanti, andamento temporale 2014-2022 del consumo e del costo medio per giornata di terapia



Figura 3.5.1c Distribuzione della prevalenza d'uso e del consumo 2022 di farmaci anticoagulanti in regime di assistenza convenzionata

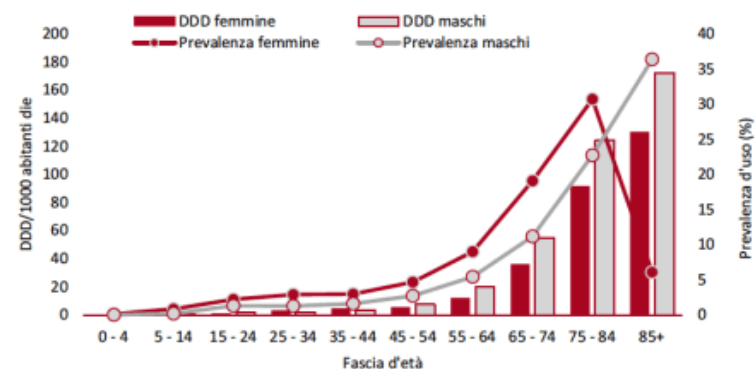


Figura 3.5.3a Antiaggreganti, andamento temporale 2014-2022 del consumo e del costo medio per giornata di terapia

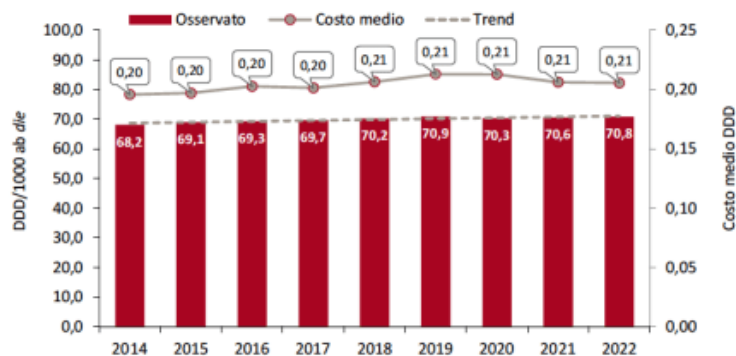
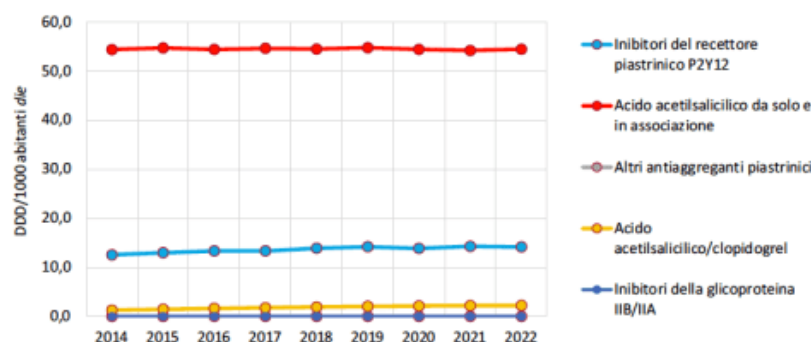


Figura 3.5.3b Antiaggreganti, andamento temporale 2014-2022 del consumo (DDD/1000 abitanti die) dei sottogruppi a maggior spesa



La prevalenza d'uso a livello nazionale è stata pari al 9,1%, nei maschi di età uguale o maggiore di 85 anni (49,7%).

Management of Perioperative Anticoagulation for Device Implantation

Merrill H. Stewart, MD, Daniel P. Morin, MD, MPH, FHRS*

23% to 24% of patients receiving PPMs
32% to 37% of those receiving ICDs
are taking anticoagulants around the time of
implantation

- Average hematoma incidence rate of 4.9%.
- A single hematoma almost doubles the risk of infection, and if reintervention is required, the chance of infection is increased more than 15-fold.
- Hematoma or bleeding complications increase the cost of implanting an ICD by \$6995 (in 2006 dollars) and add on average 3 days to the index hospitalization.
- If infection does occur, it increases mortality 4.4- to 7.7-fold (an absolute increase of 3.9% to 9.6%), with an incremental cost per admission of \$14,360– \$16,498.

In a study examining 1293 episodes of warfarin cessation for procedures in 1024 patients with predominantly atrial fibrillation, of whom approximately 50% had CHADS scores greater than or equal to 2, the average stroke rate was **0.7%**.



Card Electrophysiol Clin 10 (2018) 99–109
<https://doi.org/10.1016/j.ccep.2017.11.008>

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Scopo della consensus

- (1) Suddividere le procedure di impianto/rimozione di VAD (Venous Access Device) in base allo specifico rischio di sanguinamento?
- (2) Definire la gestione appropriata del paziente con disturbi della coagulazione candidato all'inserimento/rimozione di un VAD?
- (3) Definire la gestione appropriata del paziente in terapia antitrombotica candidato all'inserimento/rimozione di un VAD?



Table 2. (Continued)

	Type of venous access procedure		
	Minimally invasive (<i>all peripheral VADs, nontunneled PICCs, nontunneled FICCs at mid-thigh</i>)	Moderately invasive (<i>nontunneled CICCs, nontunneled FICCs at the groin, tunneled PICCs, nontunneled dialysis catheters</i>)	Highly invasive (<i>tunneled CICCs, tunneled FICCs, tunneled-cuffed dialysis catheters, ports and PICC-ports</i>)
DOAC	Do not withhold	Wait 12 h after last dose	Withhold 24–48 h, depending on the type of drug and on renal function (see text)
UFH	Do not withhold	Withhold 4 h	Withhold 4–6 h
LMWH	Do not withhold	Withhold one dose	Withhold 8–12 h (prophylactic dose) or 24 h (therapeutic dose)
Fondaparinux	Do not withhold	Withhold one dose	Withhold 24 h (prophylactic dose) or 36 h (therapeutic dose)
SAPT	Do not withhold	Do not withhold	Do not withhold
DAPT	Do not withhold	In emergency, do not withhold; in elective procedure, withhold one drug (see text)	Withhold one drug (see details in the text)
Antithrombotic treatment			
VKA	Do not withhold	Aim for PT/INR < 3 (see text)	Maintain PT/INR in the low therapeutic range (see text)



BRIDGE Study

Perioperative Anticoagulation in Atrial Fibrillation

Study Design

- Randomized trial (N=1,884)
- No bridging (n=950)
- Bridging (n=934)

Protocol

- Stop warfarin: 5 days before
- LMWH or placebo: 3 days before
- Resume: 24h after procedure

Primary Outcomes

Arterial Thromboembolism

No Bridging: 0.4%
Bridging: 0.3%
Risk Difference: 0.1% (95% CI, -0.6 to 0.8)

Major Bleeding

No Bridging: 1.3%
Bridging: 3.2%
P=0.005 for superiority

Conclusions

No bridging was noninferior for preventing thromboembolism and superior for preventing major bleeding

Source: N Engl J Med 2015;373:823-33

PAUSE Study Results

Perioperative Management of DOACs in AF Patients

Study Overview

- 3,007 patients across 23 centers
- Distribution:
 - Apixaban: 1,257 (41.8%)
 - Dabigatran: 668 (22.2%)
 - Rivaroxaban: 1,082 (36.0%)
- 33.5% high bleeding risk procedures

Protocol

Low Bleeding Risk:

Stop: 1 day before | Resume: 1 day after

High Bleeding Risk:

Stop: 2 days before | Resume: 2-3 days after

Key Outcomes (30-day)

Major Bleeding Rates

- Apixaban: 1.35% (CI: 0-2.00%)
- Dabigatran: 0.90% (CI: 0-1.73%)
- Rivaroxaban: 1.85% (CI: 0-2.65%)

Arterial Thromboembolism

- Apixaban: 0.16% (CI: 0-0.48%)
- Dabigatran: 0.60% (CI: 0-1.33%)
- Rivaroxaban: 0.37% (CI: 0-0.82%)

Key Findings

- >90% achieved target anticoagulation
- No heparin bridging needed
- No routine coagulation testing required

Source: JAMA Internal Medicine, Published online August 5, 2019



Peri-procedure management of antithrombotic agents and thrombocytopenia for common procedures in oncology: Guidance from the SSC of the ISTH

Tzu-Fei Wang¹ | Kristen M. Sanfilippo² | James Douketis³ | Anna Falanga^{4,5} | John Karageorgiou⁶ | Anthony Maraveyas⁷ | Thomas L. Ortel^{8,9} | Gerald Soff¹⁰ | Suresh Vedantham⁶ | Jeffrey I. Zwicker¹¹

3.2 | Venous access (central line insertion)

No studies related to the management of anticoagulation or antiplatelet agents at the time of central line insertion specific to patients with cancer were identified. Central line insertion such as peripheral inserted central catheters is typically viewed as a minor procedure with a low risk of bleeding, for which no change in anticoagulation and/or antiplatelet agents is recommended.²⁴ On the other hand, tunneled catheters and implantable ports are typically categorized as higher bleeding risks due to greater tissue manipulation, and a short interruption of anticoagulation similar to the low bleeding risk category in the Perioperative Management of Patients with Atrial Fibrillation (PAUSE) study (i.e., 1–2 days for DOAC) is typically suggested.^{9,24,25} The same guidance applies to non-tunneled central venous catheter placement in a non-compressible area such as subclavian, transhepatic, or translumbar veins.]



Table 1. Characteristic of the population.

Patients undergoing JCVC implantation (total population)	185
Age, median (IQR)	81 (31–99)
Male, n (%)	68 (36.8%)
Severe coagulopathy, n (%)	20 (10.8%)
Platelet $<50 \times 10^9$, n (%)	13 (7.0%)
Spontaneous INR > 1.5 , n (%)	7 (3.7%)
On anti-thrombotic medication, n (%)	86 (46.5%)
Therapeutic dose anticoagulant, n (%)	30 (16.2%)
Prophylactic dose anticoagulation, n (%)	42 (22.7%)
Therapeutic dose anticoagulation plus SAPT, n (%)	1 (0.5%)
Prophylactic dose anticoagulation plus SAPT, n (%)	5 (2.7%)
DAPT, n (%)	1 (0.5%)
Prophylactic dose anticoagulation plus DAPT, n (%)	1 (0.5%)
SAPT, n (%)	6 (3.2%)

INR: international normalized ratio; SAPT: single antiplatelet therapy;
DAPT: dual antiplatelet therapy.

No contraindication to internal jugular central venous catheter insertion in patients at increased risk of bleeding: Results from a prospective observational study in a internal medicine department

Nicola Mumoli¹, Marco Mereghetti¹, Riccardo Capra¹,
Matteo Pistoia¹, Laura Dalla Torre¹, Francesco Dentali²
and Igor Giarretta² 

major bleeding: the ultrasound or CT scan confirmed intrathoracic, mediastinal, or internal neck hemorrhage or line-related bleeding causing hemodynamic compromise.

minor bleeding: the local oozing or superficial hematoma



The SIC protocol: A seven-step strategy to minimize complications potentially related to the insertion of centrally inserted central catheters

Fabrizio Brescia¹, Mauro Pittiruti², Matthew Ostroff³, Timothy R Spencer⁴ and Robert B Dawson⁵

Protocollo SIC Safe Insertion of Central Catheters

- Fase 1 **Valutazione preprocedurale** - scelta della vena mediante esame ecografico sistematico delle vene del collo e della regione sopra/infraclavare (protocollo RaCeVA) e scelta del sito di uscita cutanea ottimale (ZIM centrale).
- Fase 2 **Tecnica asettica appropriata**, igiene delle mani, antisepsi cutanea con clorexidina al 2% in alcol al 70%, massime protezioni barriera.
- Fase 3 **Inserimento ecoguidato** - venipuntura ecoguidata, verifica ecografica della corretta direzione del filo guida (tip navigation) e dell'assenza di pneumotorace (scansione pleurica).
- Fase 4 **Valutazione intra-procedurale della posizione della punta**: verifica della posizione centrale della punta mediante ECG intracavitario e/o mediante ecocardiografia transtoracica, utilizzando il "bubble test".
- Fase 5 Adeguata protezione del sito di uscita cutanea-riduzione del rischio di sanguinamento e del rischio di contaminazione mediante apposizione di **colla cianoacrilica**
- Fase 6 Adeguato **fissaggio del catetere**: stabilizzazione del catetere mediante dispositivi cutanei adesivi privi di sutura, medicazioni trasparenti con fissaggio integrato o ancoraggio sottocutaneo.
- Fase 7 Copertura appropriata del sito di uscita cutanea - utilizzo di una **medicazione trasparente semipermeabile**, preferibilmente ad alta traspirabilità.



Cianoacrilato

Tissue adhesive for vascular access devices: who, what, where and when?

Amanda Corley, Nicole Marsh, Amanda J Ullman and Claire M Rickard

British Journal of Nursing, 2017, (IV Therapy Supplement) Vol 26, No 19

Table 1. A selection of tissue adhesives used for skin closure or with vascular access devices*

Brand name (manufacturer)	Chemical constitution	Presentation (ml)	Storage (Celsius)	Time to degradation (days)	Properties
Histoacryl/Histoacryl Blue (B.Braun, Melsungen, Germany)	NBCA	0.5	< 22	7-10	■ High tensile strength ■ Microbial barrier ■ Quick setting time
Histoacryl Flexible (B.Braun, Melsungen, Germany)	NBCA + softener	0.5	< 25	7-10	■ High tensile strength ■ More flexible than NBCA ■ Less heat production on application ■ Microbial barrier
Dermabond (Ethicon, Somerville, NJ, USA)	OCA	0.36, 0.7	< 30	5-10	■ Higher tensile strength than NBCA ■ More flexible than NBCA ■ Microbial barrier
Surgiseal/SecurePortIV (Adhesion Biomedical, Wyomissing, PA, USA)	OCA	0.35, 0.5 (Surgiseal) 0.15 (SecurePortIV)	< 30	5-10	■ Higher tensile strength than NBCA ■ More flexible than NBCA ■ High moisture vapour transmission rate ■ Microbial barrier
Glubran Tiss2 (GEM, Viareggio, Italy)	NBCA + OCA	0.25, 0.35, 0.5	0-4	5-8	■ Improved flexibility ■ High tensile strength ■ Breathable ■ Less heat production on application ■ Microbial barrier
Inderm3 flexifuse (Connexion, Dublin, Ireland)	NBCA + OCA	0.75	4-30	5-8	■ Flexibility ■ High tensile strength ■ Minimal heat produced ■ Microbial barrier

*Information in this table is obtained from manufacturers' website and/or product information brochures; NBCA, N-butyl-2-cyanoacrylate; OCA, 2-octyl-cyanoacrylate.



- Come fissaggio
- Chiusura di ferite con una barriera protettiva
- Per ridurre la fuoriuscita di sangue dal punto d'inserzione
- Per ridurre l'infezione in maniera effettiva contro batteri, funghi e lieviti



Minimo trauma durante la venipuntura

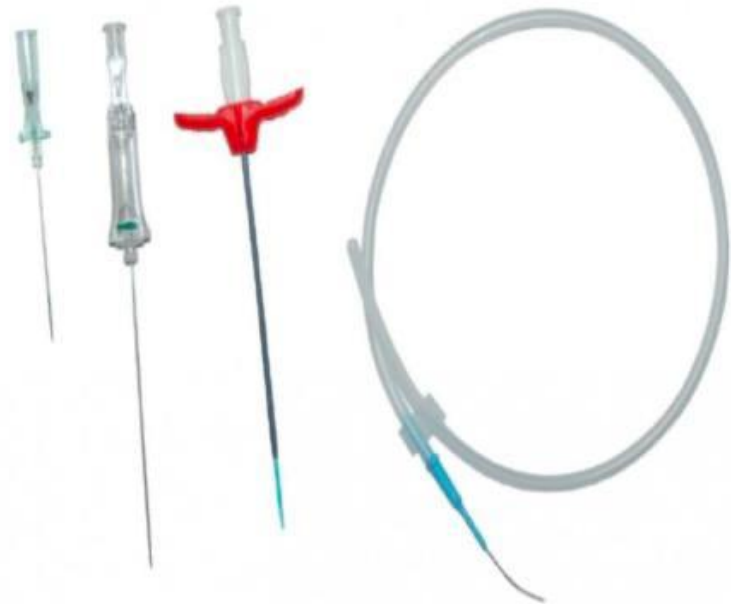


Kit da microintroduzione:

Ago 21 G ecogenico

Guida soft straight 0,018

Microintroduttore 3,5 Fr



**No contraindication to internal jugular
central venous catheter insertion in
patients at increased risk of bleeding:
Results from a prospective observational
study in a internal medicine department**Nicola Mumoli¹, Marco Mereghetti¹, Riccardo Capra¹,
Matteo Pistoia¹, Laura Dalla Torre¹, Francesco Dentali²
and Igor Giarretta² **Table 2.** Number of major and minor bleeding events in patients with severe coagulopathy, in patients on antithrombotic medication and in controls.

	Severe coagulopathy (40)	On anti-thrombotic medication (86)	Controls (59)	Overall (185)
Major bleedings	0	0	0	0
Minor bleedings	0	4	0	4 (2.1%)
Oozing from the exit site	0	0	0	0
Superficial hematoma	0	4	0	4

None of the enrolled patients showed major bleeding.

Incidence of minor bleedings 2.1% (95% IC: 0.03–4.2)

with two patients requiring line removal and repositioning (1.1%;95% IC: –0.45 to 2.6).

All the recorded bleeds occurred in patient on antithrombotic medication,



Conclusioni

- La consensus Gavecelt del 2022 ha definito la categorie di rischio delle singole procedure di impianto di DAV
- La consensus Gavecelt del 2022 ha fornito delle indicazioni sul management dei pazienti ad aumentato rischio emorragico
- Nei soggetti ad aumentato rischio di sanguinamento l'impiego di «bundle» di prevenzione delle complicanze emorragiche permette di minimizzare l'incidenza di eventi.
- Operatori adeguatamente addestrati, applicando le attuali raccomandazioni, possono impiantare CICC giugulari, anche in pazienti ad aumentato rischio di sanguinamento.
- La somministrazione preventiva di emocomponenti non è necessaria, in quanto richiede sempre un adeguato catetere venoso e potrebbe causare ulteriore complicazione o ritardi nella gestione dei pazienti.





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