GAVeCeLT
Gli Accessi Venosi Centrali a Lungo Termine

II Convegno Nazionale PICC-port - 5 dicembre 2022
XV PICC Day - 6 dicembre 2022
XII Congresso Nazionale GAVeCeLT - 7 dicembre 2022

XII Congresso Nazionale GAVeCeLT - 7 dicembre 2022

Education and training in insertion and management of venous accesses today

IEO
Istituto Europeo di Oncologia

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Dept. of G-I Surgery
Director, Peritoneal Cancer Surgery Unit and Ovarian Cancer Center
European Istitute of Oncology – Milan, Italy

Adjunct Professor of General Surgery, State University of Milan
PICC TEAM & VASCULAR ACCESS – IEO Milan

L'Espresso
28 mag 2017

Disclosures

•Dr Biffi has been Consultant/Advisory Board Member for Carefusion Italy srl, Sesto Fiorentino up to 2013.

•He obtained technical support for conducting RCTs by Bard Italy, Rome ; B. Braun SpA, Milan; and ConvaTEC Inc., Princeton, NJ USA.

•He received unrestricted educational grants from Firms /Companies (Bard Italy, B . Braun Milano, Johnson & Johnson Italy, Ethicon Endosurgery , Covidien Italy) and Public Charities.

•Part of his investigational activity was supported by a competitive research grant of AIRC (Associazione Italiana per la Ricerca sul Cancro = Italian Cancer Research Foundation). Grant # 1126.

I HAVE NO CONFLICTS OF INTEREST TO DISCLOSE

LAST SUPPER – Leonardo da Vinci, AD 1495-1498, Milano

"Studia prima la scienza e poi seguita la pratica nata da essa scienza".

[First study science, and then apply practice derived]. ***Education and training…***

The world of vascular access is characterized today by a small group of experts and professional societies who use evidence to base decisions on the appropriate vascular access device for the patient.

In practice, the vast majority of vascular access professionals have little to no knowledge of the existing evidence-based guidelines.
(Choices vary accordingly).

P Blackburn 2016

WoCoVa Lisbon, 2016

WEDNESDAY JUNE 22, 2016 / 10:00 - 11:00 a.m.

Keynote address

The science of central venous access:

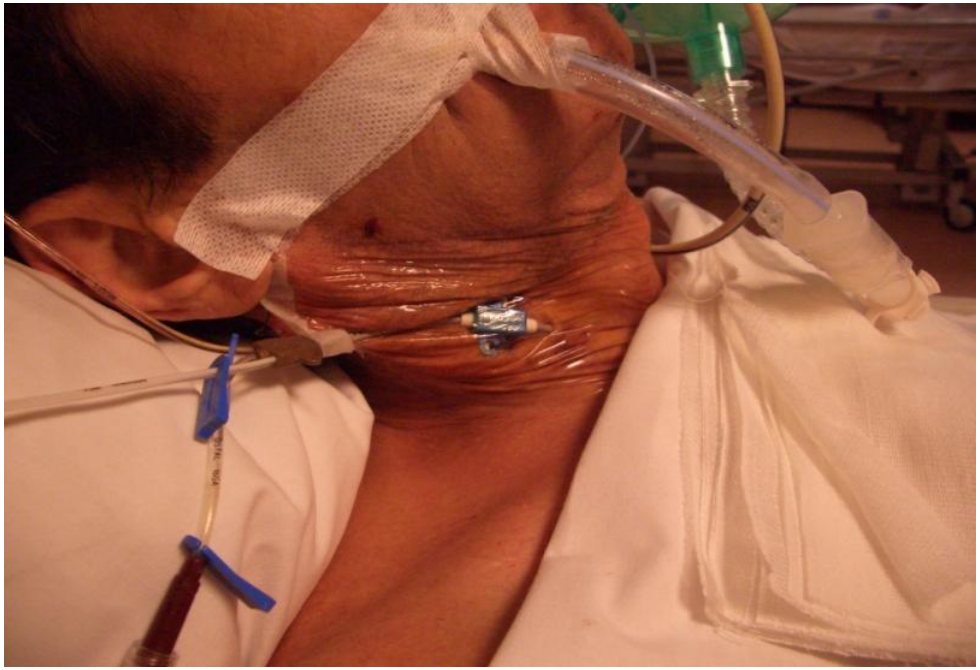
do common clinical practices meet Evidence-Based Medicine?

Filling the existing gap between evidence/recommendations and common practice.

Roberto Biffi, MD, PhD, FSPS
Director
Dept. of G-I Surgery
European Institute of Oncology
Milan, Italy

WoCoVA
4th World Congress on Vascular Access

ACCESS NURSING: Very high infectious risk: exit site at neck, poor exit site nursing



Archivio degli «orrori» - GAVeCeLT
Congresso Nazionale , Milano 2015

WoCoVA Lisbon, 2016

WEDNESDAY JUNE 22, 2016 / 10:00 - 11:00 a.m.

Keynote address

The uptake of recommendations into routine clinical practice remains slow and inconsistent.

The problem how to fill the gap between evidence and practice may be solved providing efforts directed toward a number of different strategies that can narrow these gaps, like

- provider-level interventions (including systematic audit and feedback)

- **computer-assisted clinical decision support**

- continuing education

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WoCoVA
4th World Congress on Vascular Access

WoCoVA 2016 Lisbon –
Key note Lecturer: R. BIFFI

WoCoVA
7th World Congress on Vascular Access

16-18 OCTOBER 2022 MEGARON ATHENS GREECE

40 years of clinical practice in VADs

UNIVERSITÀ CATTOLICA del Sacro Cuore

Mauro PITTIRUTI
Catholic University Hospital, Rome - Italy

GAVeCeLT
Gli Accessi Venosi Centrali a Lungo Termine

Prehistory 1977-1999

All clinical practices of this era are antiquate and unacceptable today

- Landmark-based central venipuncture
- PICCs and midlines inserted at the antecubital fossa
- Port insertion by venous cutdown
- Tunneled-cuffed silicone catheters as long term VADs
- Valved catheters
- Tip location by fluoroscopy or chest x-ray
- Securement by stitches
- Skin antisepsis with iodopovidone

WoCoVA
7th World Congress on Vascular Access

RANDOMIZED CONTROLLED TRIALS

Primary Open Versus Closed Implantation Strategy for Totally Implantable Venous Access Ports

The Multicentre Randomized Controlled PORTAS-3 Trial (DRKS 00004900)

Hüttner, Felix J. MD[*,†]; Bruckner, Tom PhD[‡]; Hackbusch, Matthes[‡]; Weitz, Jürgen MD[§]; Bork, Ulrich MD[§]; Kotschenreuther, Peter MD[||]; Heupel, Oliver MD[||]; Kümmel, Sabine MD[¶]; Schlitt, Hans J. MD[¶]; Mattulat, Matthias MD[#]; Pintér, László MD[**]; Seiler, Christoph M. MD[††]; Gutt, Carsten N. MD[‡‡]; Nottberg, Hubertus S. MD[§§]; Pohl, Alexander MD[||||]; Ghanem, Firas MD[¶¶]; Meyer, Thomas MD[##]; Imdahl, Andreas MD[***]; Neudecker, Jens MD[†††]; Müller, Verena A. MD[†††]; Gehrig, Tobias MD[‡‡‡]; Reineke, Mario MD[§§§]; von Frankenberg, Moritz MD[||||||]; Schumacher, Guido MD[¶¶¶]; Hennes, Roland MD[*,###]; Mihaljevic, André L. MD[*]; Rossion, Inga MD[†]; Klose, Christina[‡]; Kieser, Meinhard PhD[‡]; Büchler, Markus W. MD[*]; Diener, Markus K. MD[*,†]; Knebel, Phillip MD[*,†]

Author Information

Annals of Surgery: December 2020 - Volume 272 - Issue 6 - p 950-960
doi: 10.1097/SLA.0000000000003705

Results:
Between November 9, 2014 and September 5, 2016, 1205 patients were randomized.
Of these, 1159 (open n = 583; closed n = 576) were finally analyzed.

The rate of pneumothorax or haemothorax was significantly reduced with the open strategy [odds ratio 0.27, 95% confidence interval (CI) 0.09–0.88; *P* = 0.029].

Operation time was shorter for the closed strategy. Primary success rates, tolerability, morbidity, dose rate of radiation, and 30-day mortality did not differ significantly between the groups.

Conclusion:
A primary open strategy by cut-down of the cephalic vein, if necessary enhanced by a modified Seldinger technique, reduces the frequency of pneumothorax or haemothorax after central venous port implantation significantly, compared with a closed strategy by **primary puncture of the subclavian vein without routine sonographic guidance**. Therefore, **open surgical cut-down should be the reference standard** for port implantation in comparable cohorts.

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Huttner et al, Ann Surg 2020

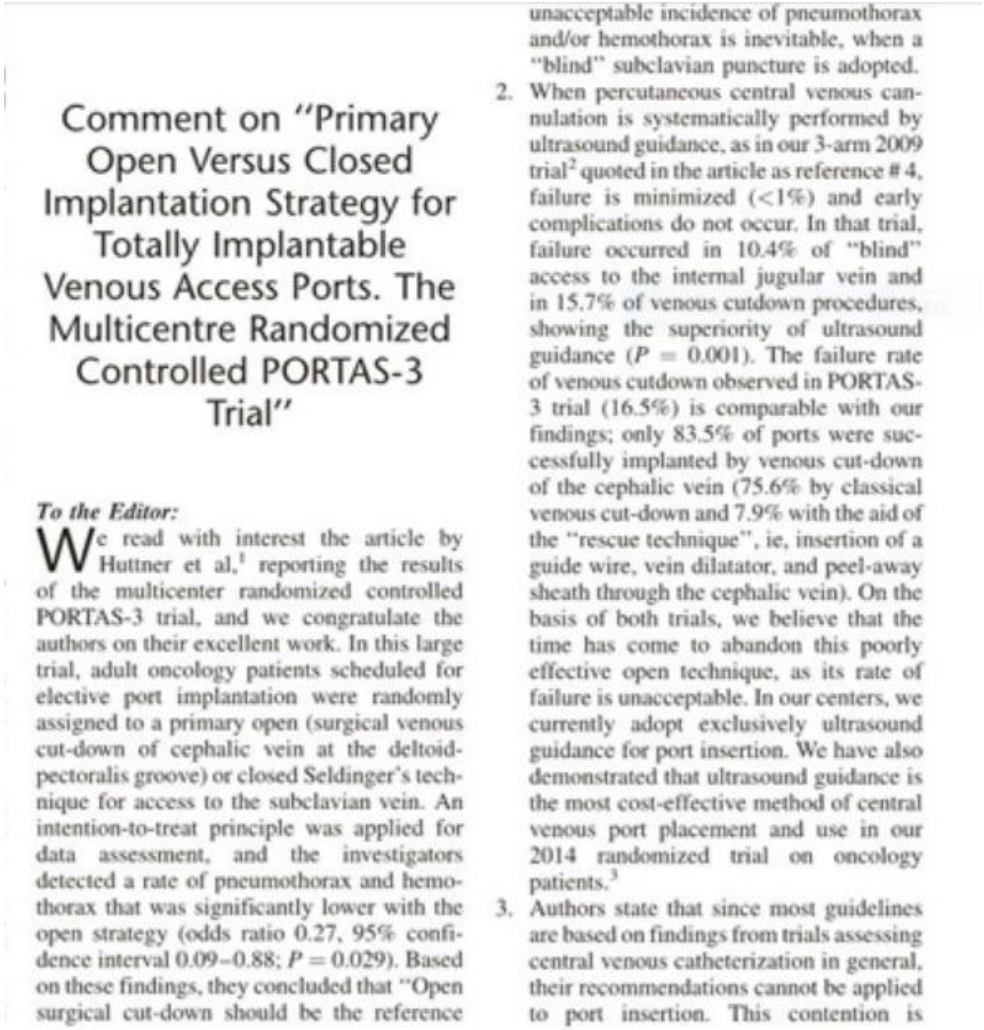
LETTERS TO THE EDITOR

Comment on “Primary Open Versus Closed Implantation Strategy for Totally Implantable Venous Access Ports. The Multicentre Randomized Controlled PORTAS-3 Trial”

Biffi, Roberto MD; Bertoglio, Sergio MD; Pittiruti, Mauro MD

Author Information

Annals of Surgery: December 2021 - Volume 274 - Issue 6 - p e801-e802
doi: 10.1097/SLA.0000000000004409



Comment on "Primary Open Versus Closed Implantation Strategy for Totally Implantable Venous Access Ports. The Multicentre Randomized Controlled PORTAS-3 Trial"

To the Editor:

We read with interest the article by Huttner et al,[1] reporting the results of the multicenter randomized controlled PORTAS-3 trial, and we congratulate the authors on their excellent work. In this large trial, adult oncology patients scheduled for elective port implantation were randomly assigned to a primary open (surgical venous cut-down of cephalic vein at the deltoid-pectoralis groove) or closed Seldinger's technique for access to the subclavian vein. An intention-to-treat principle was applied for data assessment, and the investigators detected a rate of pneumothorax and hemothorax that was significantly lower with the open strategy (odds ratio 0.27, 95% confidence interval 0.09–0.88; $P = 0.029$). Based on these findings, they concluded that "Open surgical cut-down should be the reference

unacceptable incidence of pneumothorax and/or hemothorax is inevitable, when a "blind" subclavian puncture is adopted.

2. When percutaneous central venous cannulation is systematically performed by ultrasound guidance, as in our 3-arm 2009 trial[2] quoted in the article as reference # 4, failure is minimized (<1%) and early complications do not occur. In that trial, failure occurred in 10.4% of "blind" access to the internal jugular vein and in 15.7% of venous cutdown procedures, showing the superiority of ultrasound guidance ($P = 0.001$). The failure rate of venous cutdown observed in PORTAS-3 trial (16.5%) is comparable with our findings; only 83.5% of ports were successfully implanted by venous cut-down of the cephalic vein (75.6% by classical venous cut-down and 7.9% with the aid of the "rescue technique", ie, insertion of a guide wire, vein dilatator, and peel-away sheath through the cephalic vein). On the basis of both trials, we believe that the time has come to abandon this poorly effective open technique, as its rate of failure is unacceptable. In our centers, we currently adopt exclusively ultrasound guidance for port insertion. We have also demonstrated that ultrasound guidance is the most cost-effective method of central venous port placement and use in our 2014 randomized trial on oncology patients.[3]
3. Authors state that since most guidelines are based on findings from trials assessing central venous catheterization in general, their recommendations cannot be applied to port insertion. This contention is

Main points of criticism:

- Control arm (NO US GUIDED - blind cannulation) not appropriate
- Failure rate of open strategy 16,5% in spite of a «rescue technique» adopted
- Differential costs not analyzed (operation time shorter for closed technique….)

LETTERS TO THE EDITOR

Response to the Comment on “Primary Open versus Closed Implantation Strategy for Totally Implantable Venous Access Ports: The Multicenter Randomized Controlled PORTAS-3 trial (DRKS 00004900)”

Hüttner, Felix J. MD; Büchler, Markus W. MD; Diener, Markus K. MD; Knebel, Phillip MD

Author Information

Main points:
this is a pragmatic *«real world»* trial.

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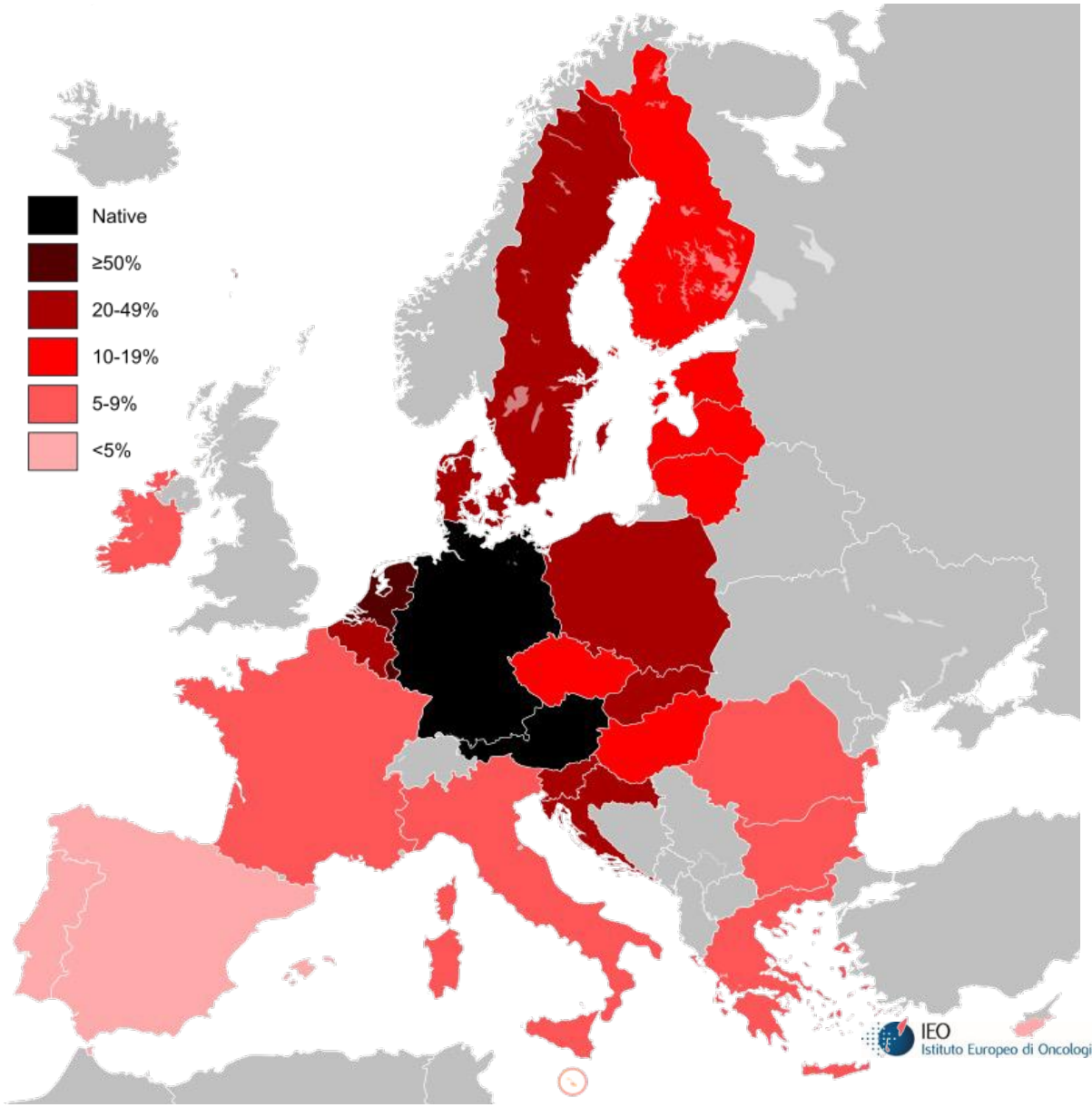


La lingua tedesca in Europa è parlata e riconosciuta come lingua ufficiale in Germania, in Austria, in Svizzera, in Liechtenstein e in Lussemburgo.

È la lingua con il maggior numero di parlanti nativi del continente europeo e dell'Unione europea.

original article

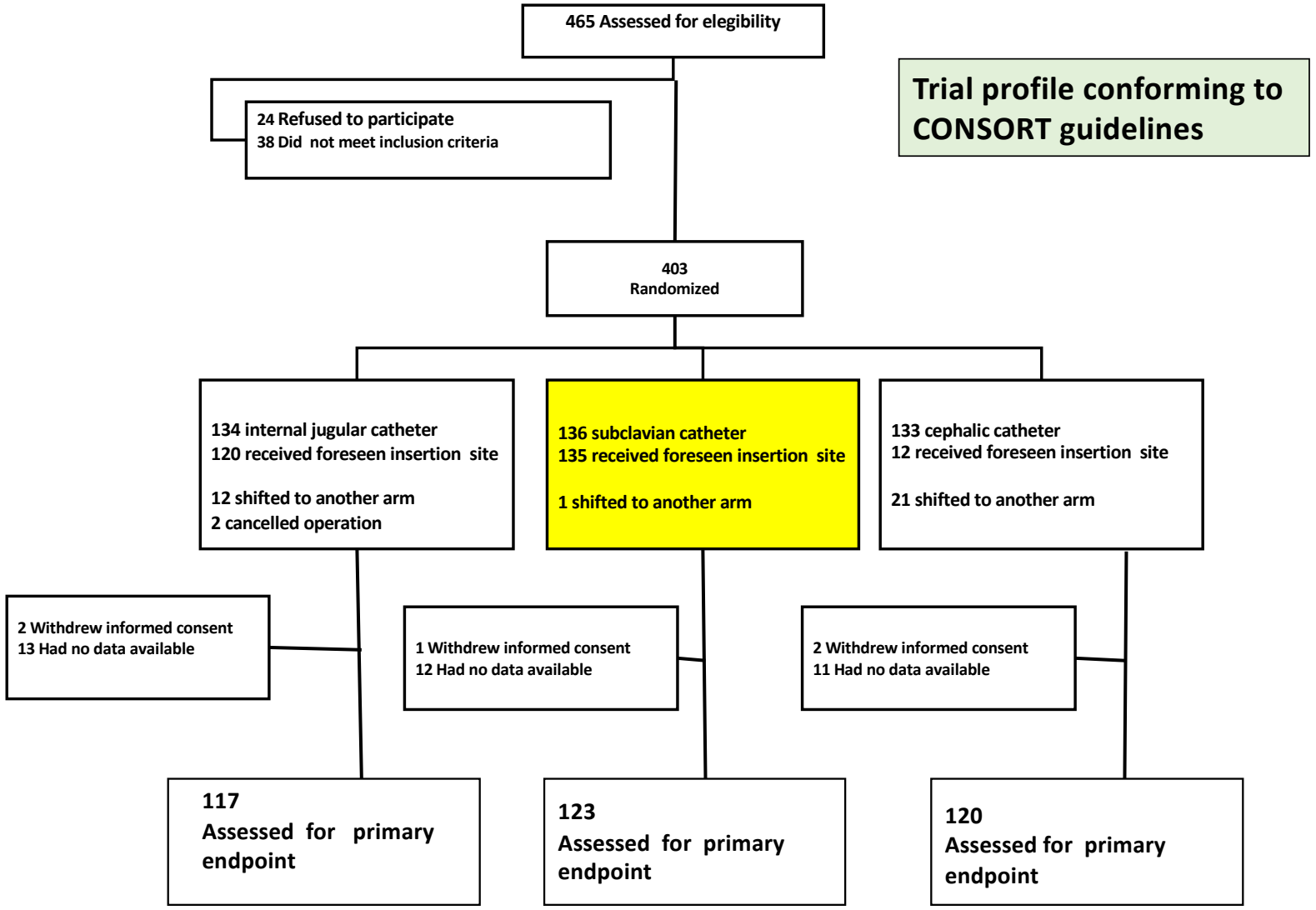
Annals of Oncology 20: 935–940, 2009
doi:10.1093/annonc/mdn701
Published online 29 January 2009

Best choice of central venous insertion site for the prevention of catheter-related complications in adult patients who need cancer therapy: a randomized trial

R. Biffi[1]*, F. Orsi[2], S. Pozzi[1], U. Pace[3], G. Bonomo[2], L. Monfardini[2], P. Della Vigna[2], N. Rotmensz[4], D. Radice[4], M. G. Zampino[5], N. Fazio[5], F. de Braud[5], B. Andreoni[3] & A. Goldhirsch[5]

[1]Division of Abdomino-Pelvic Surgery; [2]Division of Interventional Radiology; [3]Division of General and Laparoscopic Surgery; [4]Division of Epidemiology and Biostatistics; [5]Department of Medicine, European Institute of Oncology, via Ripamonti 435, I-20141 Milan, Italy

Received 3 June 2008; revised 6 October 2008; accepted 8 October 2008


Trial profile conforming to CONSORT guidelines
465 Assessed for elegibility
24 Refused to participate
38 Did not meet inclusion criteria
403
Randomized
134 internal jugular catheter
120 received foreseen insertion site
12 shifted to another arm
2 cancelled operation
136 subclavian catheter
135 received foreseen insertion site
1 shifted to another arm
133 cephalic catheter
12 received foreseen insertion site
21 shifted to another arm
2 Withdrew informed consent
13 Had no data available
1 Withdrew informed consent
12 Had no data available
2 Withdrew informed consent
11 Had no data available
117
Assessed for primary endpoint
123
Assessed for primary endpoint
120
Assessed for primary endpoint

Failed attempts at insertion procedures, number of catheters shifted to another experimental group as defined by initial randomization, and final layout of catheters positioning by insertion sites.

	Internal jugular	Subclavian - US	Cephalic	Total
No. of catheters randomized in each group by insertion site	134	136	133	
No. of failed procedures, and subsequent choice of alternative insertion sites	14 * (10.4%) 11 subclavian 3 cephalic	1^ (0.7%) 1 cephalic	21°(15.7) 17 internal jugular 4 subclavian	36 (8.9%)
No. of catheters effectively positoned in each group by insertion site	135§	150	116	401§

* vs ^ : p = 0.001
^ vs ° : p =0.000
* vs ° : P = NS
§ 2 patients did not undergo the implant; one for intraoperative complication and one for refusal.

Ann Surg Oncol (2014) 21:3725–3731
DOI 10.1245/s10434-014-3784-5

Annals of
SURGICAL ONCOLOGY
OFFICIAL JOURNAL OF THE SOCIETY OF SURGICAL ONCOLOGY

ORIGINAL ARTICLE – HEALTHCARE POLICY AND OUTCOMES

Cost Effectiveness of Different Central Venous Approaches for Port Placement and Use in Adult Oncology Patients: Evidence From a Randomized Three-Arm Trial

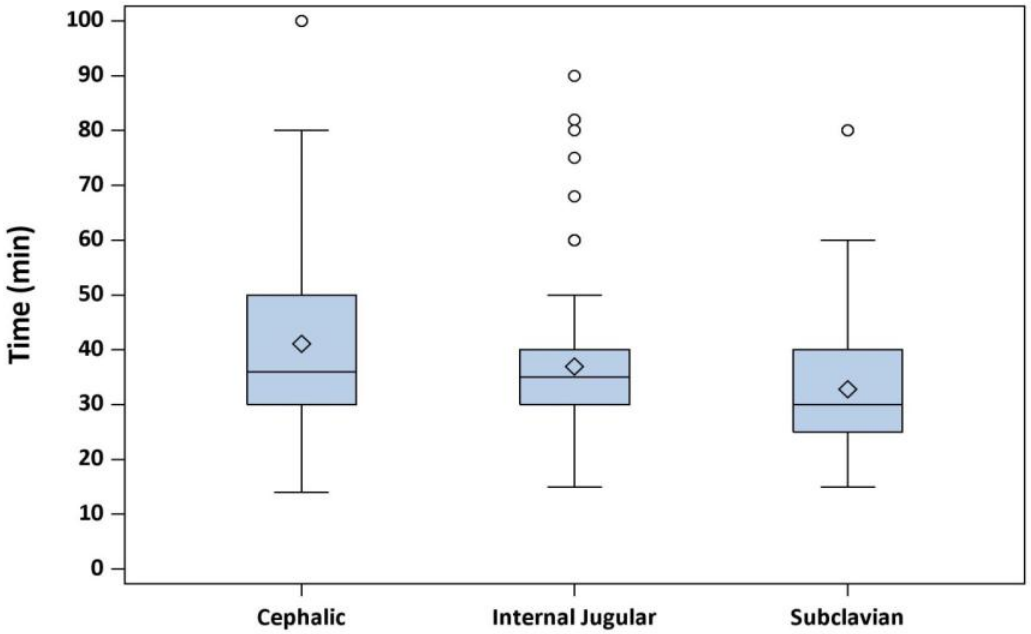
Roberto Biffi, MD[1], Simonetta Pozzi, MD[1], Guido Bonomo, MD[2], Paolo Della Vigna, MD[2], Lorenzo Monfardini, MD[2], Davide Radice, MSc[3], Nicole Rotmensz, MSc[3], Maria Giulia Zampino, MD[4], Nicola Fazio, MD[4], and Franco Orsi, MD[2]

[1]Division of Abdomino-Pelvic and Minimally Invasive Surgery, European Institute of Oncology, Milan, Italy; [2]Interventional Radiology Unit, European Institute of Oncology, Milan, Italy; [3]Division of Epidemiology and Biostatistics, European Institute of Oncology, Milan, Italy; [4]Department of Medicine, European Institute of Oncology, Milan, Italy

IMPACT OF ULTRASOUND (US) REAL TIME GUIDANCE ON COST-EFFECTIVENESS RATIO FOR LONG-TERM TOTALLY IMPLANTABLE ACCESS PORTS IN ONCOLOGY PATIENTS.

EVIDENCE FROM A RANDOMIZED THREE-ARM TRIAL.

Procedural time: analysis by Intention-to-treat

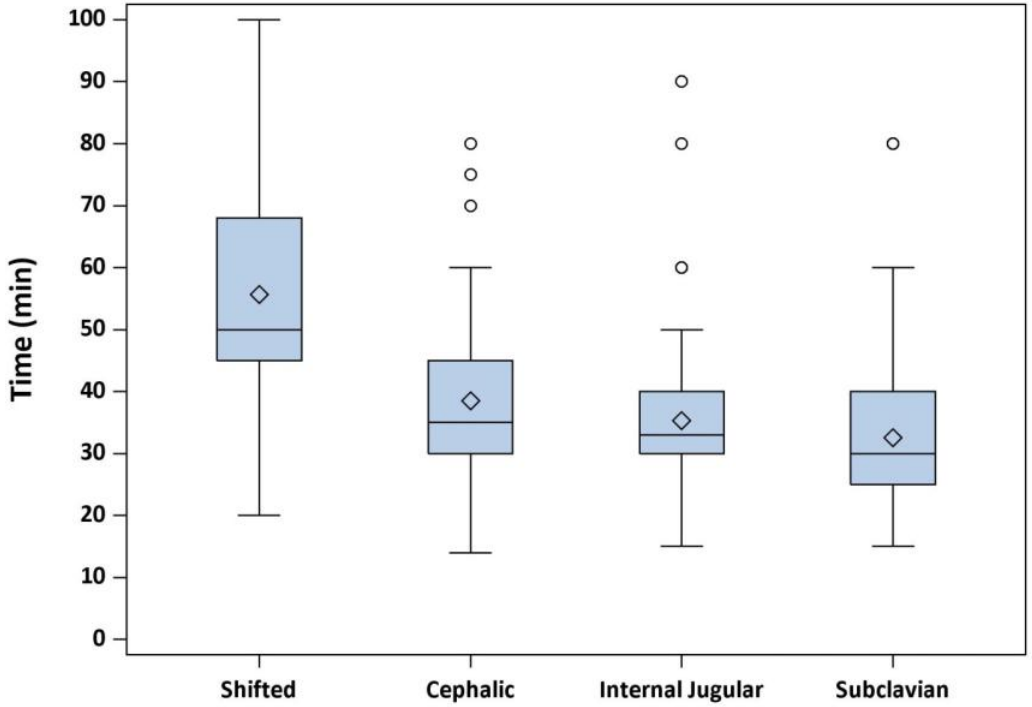


Comparisons (Wilcoxon test) :
Cephalic vs. Internal Jugular P = 0.227;
Cephalic vs. Subclavian ***P = .0003***;
Internal Jugular vs. Subclavian ***P = .009***;

IMPACT OF ULTRASOUND (US) REAL TIME GUIDANCE ON COST-EFFECTIVENESS RATIO FOR LONG-TERM TOTALLY IMPLANTABLE ACCESS PORTS IN ONCOLOGY PATIENTS.

EVIDENCE FROM A RANDOMIZED THREE-ARM TRIAL.

Procedural time: analysis by actual site of implantation



Comparisons (Wilcoxon test) :
Cephalic vs. Internal Jugular ***P = 0.026;***
Cephalic vs. Subclavian ***P < .001***;
Internal Jugular vs. Subclavian ***P = .004***;

Late Complications	**Internal Jugular (N = 117)**	**Subclavian (N= 123)**	**Cephalic (N = 120)**
Bacteraemia and/or pocket infection	1 (0.8%)	3 (2.4%)	3 (2.5%)
(Port removal)	(1)	(1)	*(2)*
Migration / malposition	0	0	6 (5.0%)
(Port removal)			(2)
Extravasation	0	4 (3.2%)	1 (0.8%)
Venous thrombosis	15 (12.8%)	8 (6.5%)	11 (9.2%)
(Port removal)			(2)
Fibrine sleeve	5 (4.3%)	1 (0.8%)	1 (0.8%)
Total	**21 (17.9%)**	**16 (13.0%)**	**21 (17.5%)**

TABLE 5 Global cost of purchase, implantation and maintenance of a totally implantable access port in this series (€)

	Internal jugular	Subclavian	Cephalic
Cost of single-port purchase and implantation (Table 4)	1,792.00	1,732.00	1,813.00
Number of implanted ports, as per intent-to-treat	133	136	134
Global cost of purchase and implantation of devices	238,366.00	235,552.00	242,942.00
Cost of treatment of early complications (Table 4a)	–	–	665.00
Cost of treatment of late complications (Table 4b, c)	47,066.00	27,622.00	37,756.00
Global cost of diagnosis and treatment of complications	47,066.00	27,622.00	38,411.00
Global cost of purchase, implantation, and treatment of complications of devices	285,432.00	263,174.00	281,353.00
Device maintenance cost (6 months)	31,654.00	31,654.00	31,654.00
Global cost for each patient treated	2,384.10	2,167.85	2,335.87

Intensive Care Med
DOI 10.1007/s00134-012-2597-x

CONFERENCE REPORTS AND EXPERT PANEL

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Lawrence A. Melniker
Susan T. Verghese

International evidence-based recommendations on ultrasound-guided vascular access

US GUIDANCE ALWAYS !

Received: 17 February 2012
Accepted: 19 April 2012

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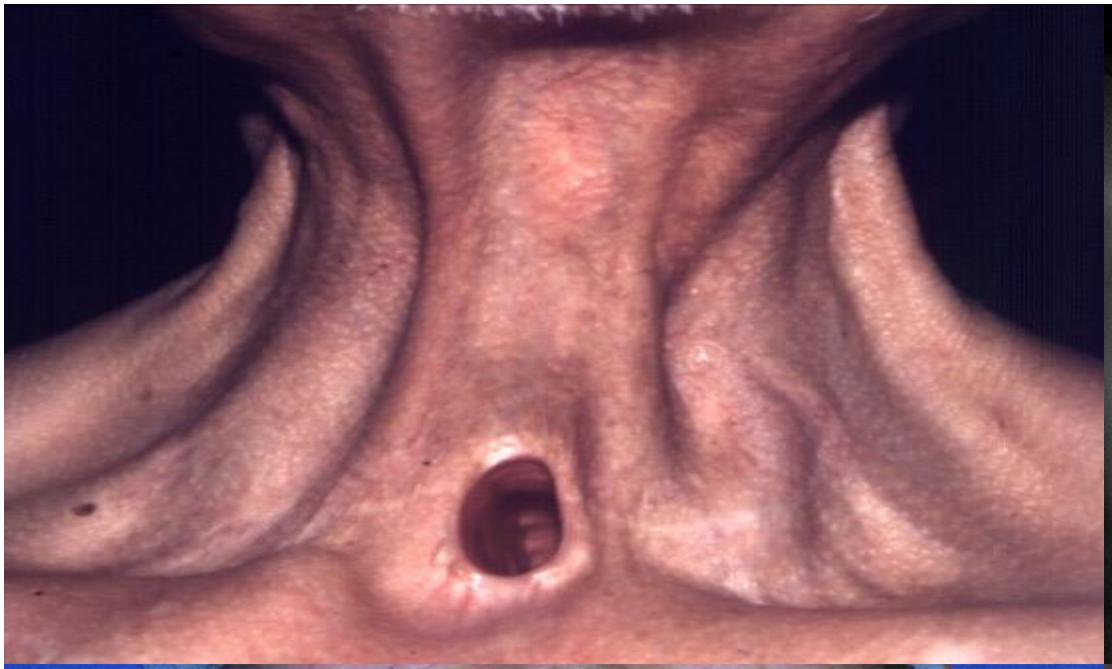

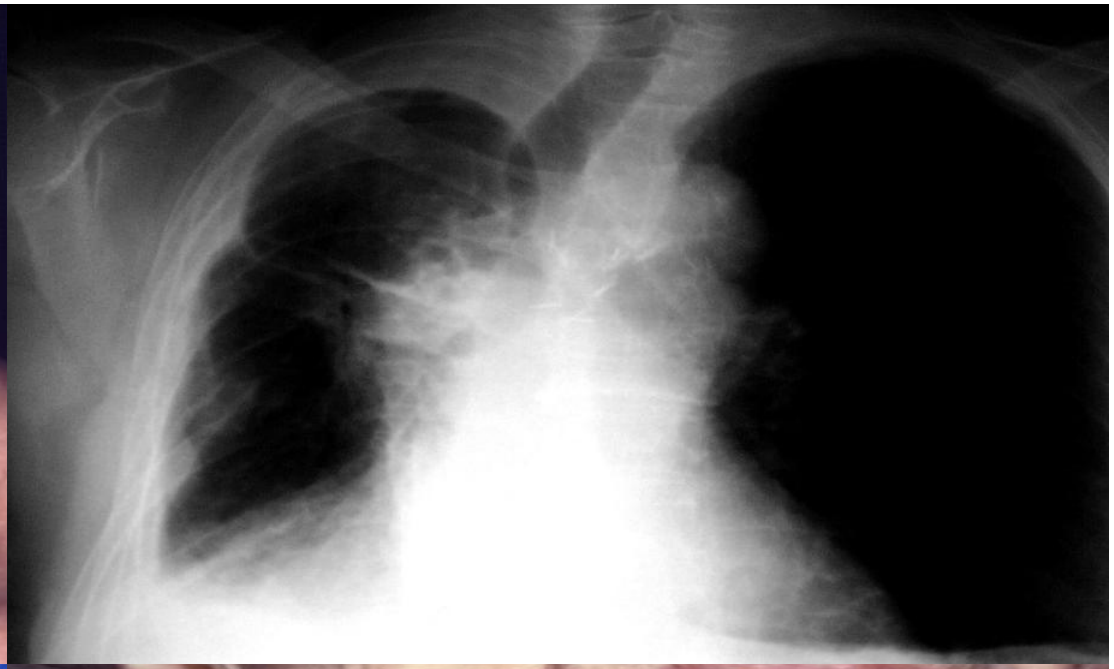

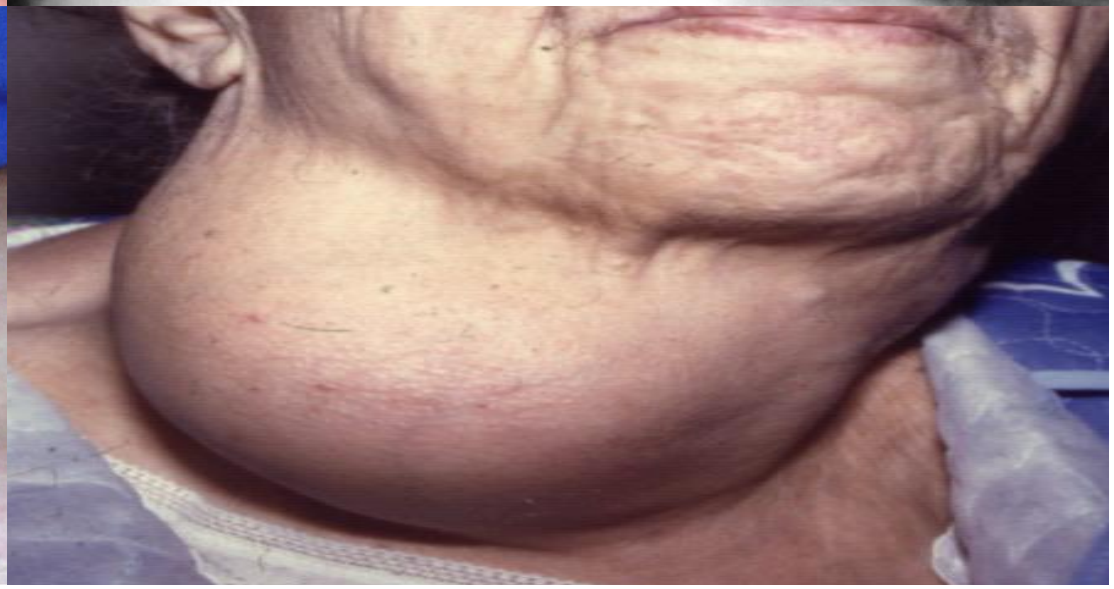

The state of the art:
towards a **global use of ultrasound**

Intensive Care Med (2015) 41:731–733
DOI 10.1007/s00134-015-3728-y

CORRESPONDENCE

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What's really new in the field of vascular access? Towards a global use of ultrasound

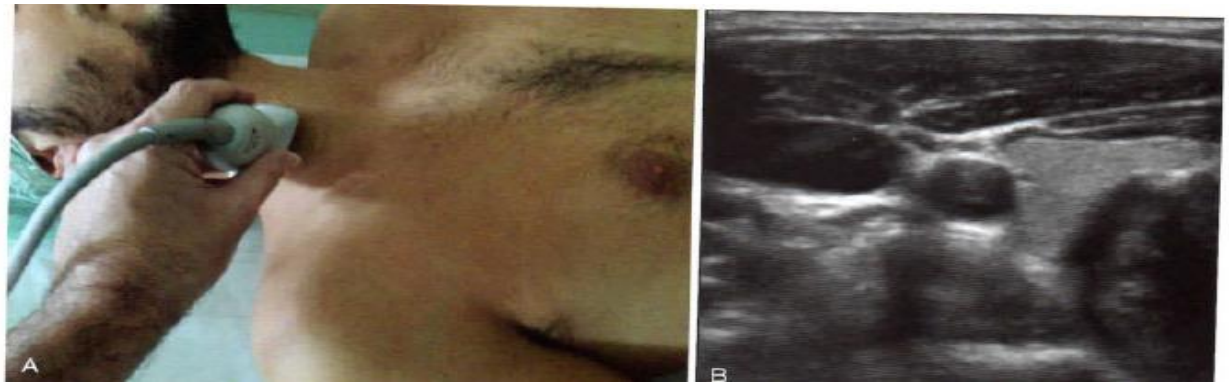
Accepted: 2 March 2015
Published online: 10 March 2015

cannulate, considering such factors as vein size, pathological abnormalities, and collapse during breathing [2]. In a critical care environment, two long-term outcome determinants are of paramount importance: (a) vessel and approach should be chosen so as to obtain an exit site allowing optimal management and dressing to reduce catheter-related infections and accidental catheter dislodgement rates; (b) vein size should be measured, since the external diameter of the catheter should not exceed 1/3 of the internal diameter of the vein: this will reduce the risk of venous thrombosis.

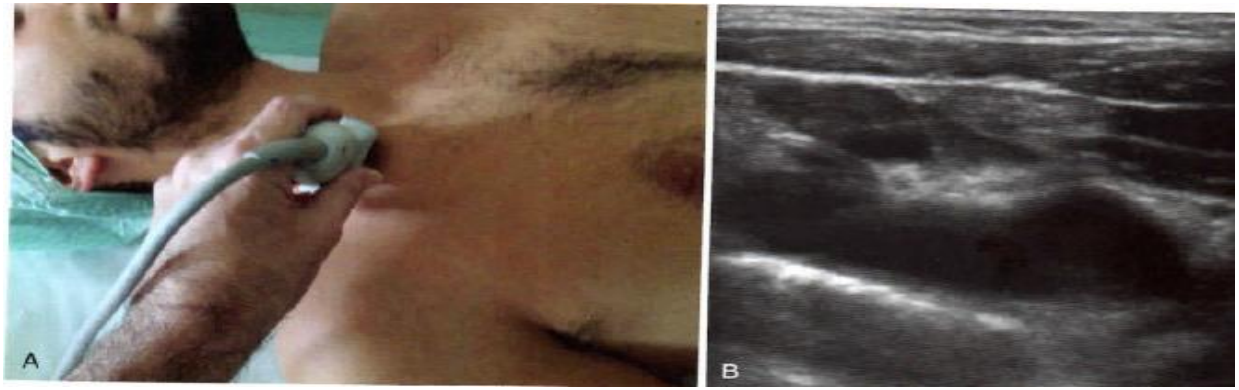
used for venipuncture. As a 'tip location' technique, transthoracic echocardiography allows direct or indirect visualization of the catheter tip or J-guidewire at the CAJ or in the lower SVC by means of a subcostal bicaval view (Fig. 1b) [2, 5]. This approach meets significant limitations in obese patients, after recent open-abdomen surgery or when stomach or colon is overinflated and/or involved with bulky diseases/tumours. Transoesophageal echocardiography is the most accurate method for tip location, but it is expensive and invasive. Recently, Kim and collaborators [4]

RACeVA

RApid **Ce**ntral **V**enous **A**ssessment protocol - 1

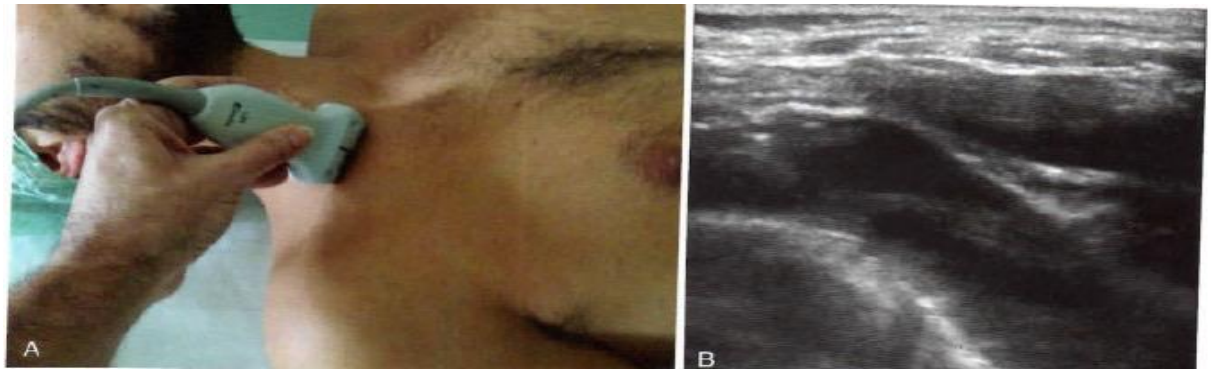


A. Probe positioned in the midneck
B. Visualization of IJG and CA



A. Probe positioned down to the sternum
B. Visualization of lower tract of IJG and SA

Courtesy of M Pittiruti



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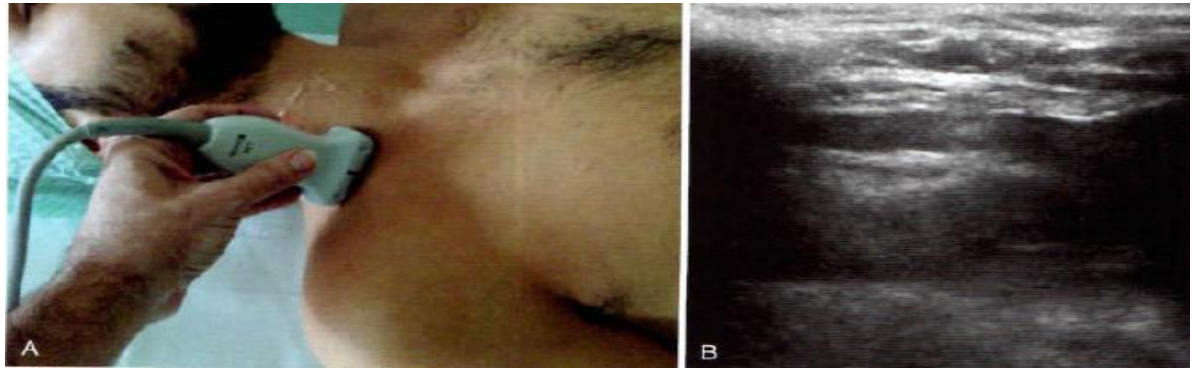
RApid **Ce**ntral **V**enous
Assessment protocol - 2

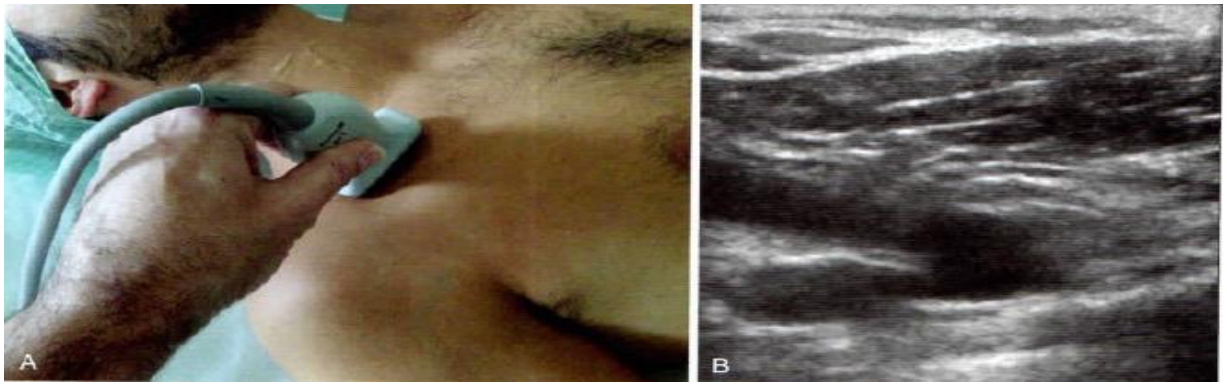
A. Tilting the probe to on almost frontal plane
B. Visualization of the brachiocephalic vein



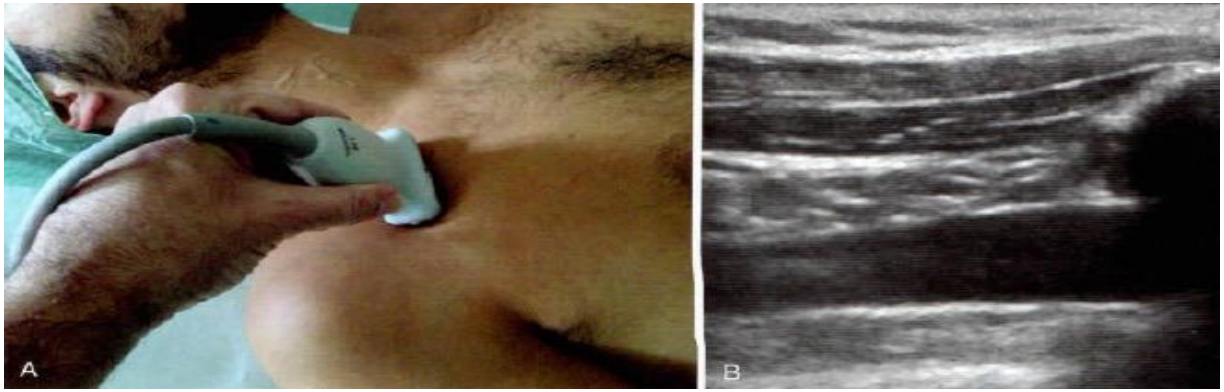
A. Sliding the probe laterally above the clavicle
B. Visualization of the SV end EJV

Courtesy of M Pittiruti

RACeVA
RApid **Ce**ntral **V**enous
Assessment protocol - 3



A. Probe below the lateral third of the clavicle
B. Visualization of the AV, AA and CV



A. Rotating the probe below the clavicle
B. Visualization of the AV in the long axis

Courtesy of M Pittiruti

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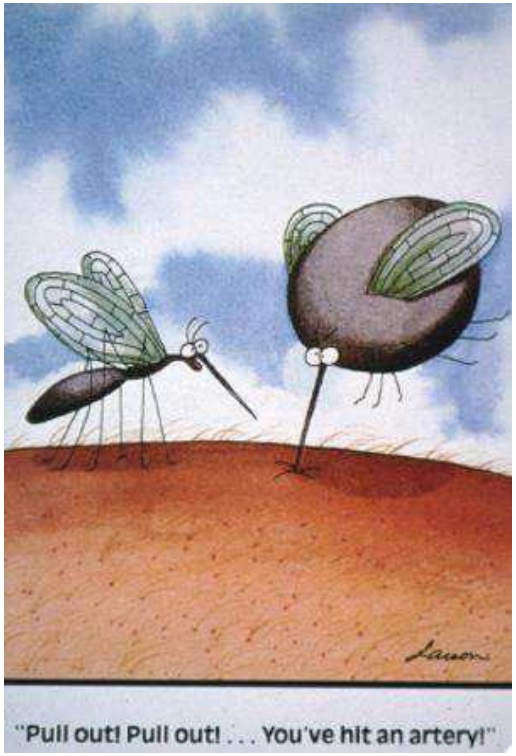
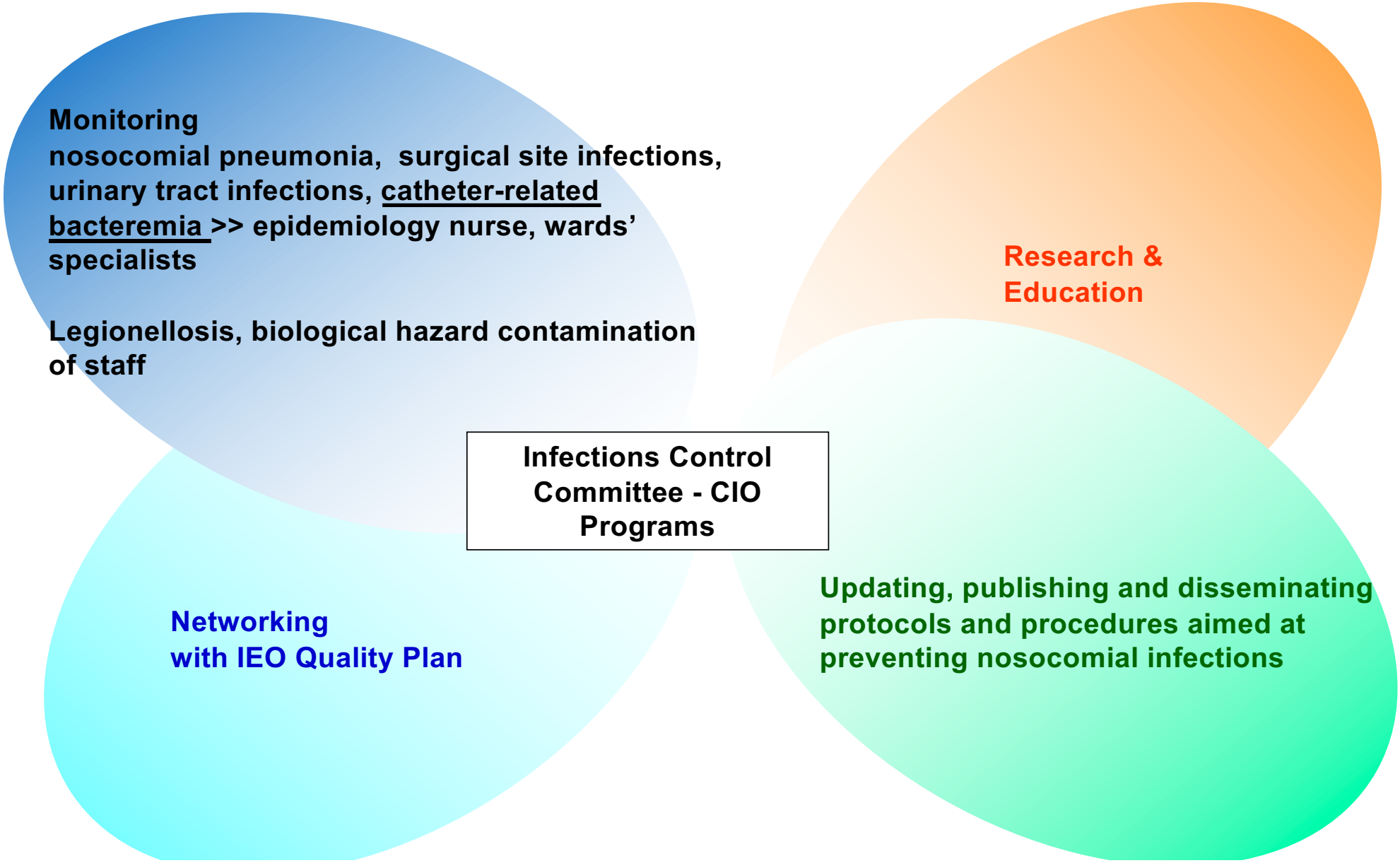
M Ostroff , WoCoVA 2022

6. Training



F Uzumcugil, WoCoVA 2022


Monitoring
nosocomial pneumonia, surgical site infections, urinary tract infections, catheter-related bacteremia >> epidemiology nurse, wards' specialists
Legionellosis, biological hazard contamination of staff
Research & Education
Infections Control Committee - CIO Programs
Networking with IEO Quality Plan
Updating, publishing and disseminating protocols and procedures aimed at preventing nosocomial infections

Il concetto di “ bundle” implica molto più della semplice integrazione di alcune GCP - Good Clinical Practices nei comportamenti quotidiani.

Sviluppato concettualmente a partire dal 2001 dall’Institute for Healthcare Improvement (IHI), qualsiasi bundle deve al suo interno comprendere POCHE (3-4) misure correttive (**Items**), basate su rigorose evidenze scientifiche , che qualora vengano messe in atto TUTTE INSIEME CONTEMPORANEAMENTE si siano sicuramente rivelate in grado di portare al beneficio clinico atteso.

BUNDLE DI PREVENZIONE DELLE BATTERIEMIE CATETERE-CORRELATE (CRBSI) NEGLI IMPIANTI DI CATETERI VENOSI CENTRALI (CVC) A BREVE E MEDIO TERMINE

[**CICC** (Centrally Inserted Central Catheter); **PICC** (Peripherally Inserted Central Catheter); **FICC** (Femorally Inserted Central Catheter)]

ITEMS:

1. **Adozione delle massime protezioni di barriera all'impianto** del catetere venoso centrale CICC, PICC o FICC (sia per il paziente che per l'operatore). Operatore : dispositivi di protezione individuali, maschera, cappello, lavaggio chirurgico delle mani, camice chirurgico, guanti sterili. Paziente: cappello, preparazione del sito, utilizzo di teli sterili in grado di coprire tutto il corpo.

2. **Impiego della clorexidina in dispensatore mono-paziente** (soluzione alcoolica al 2% in alcol isopropilico al 70%), per la disinfezione del sito al momento dell'impianto.

3. **Uso sistematico della clorexidina in soluzione alcoolica al 2% e della tecnica asettica no-touch** per la disinfezione del sito di uscita del catetere venoso.

TABELLA RIASSUNTIVA - Bundle IEO Prevenzione batteriemie / CRBSI

ITEM	VALUTAZIONE COMPLIANCE	VALUTAZIONE EFFICACIA
MASSIME PROTEZIONI DI BARRIERA - PAZIENTE ED OPERATORE	CHECK LIST / TIME OUT - BOP DIARIO CLINICO - UTI, REPARTI	TASSO CRBSI / 1000 GG. CATETERE
IMPIEGO CLOREXIDINA ALCOOLICA 2% - IPA 70% DISPENSER MONOPAZIENTE AL MOMENTO DELL'IMPIANTO	CHECK LIST / TIME OUT - BOP REPORT PERIODICO CONSUMI - SERVIZIO FARMACIA	TASSO CRBSI / 1000 GG. CATETERE
MEDICAZIONE: IMPIEGO CLOREXIDINA ALCOOLICA 2% TECNICA NO -TOUCH	DIARIO CLINICO / UTI, REPARTI RILIEVO N. NO TOUCH / TOTALE	TASSO CRBSI / 1000 GG. CATETERE

However….

- ESMO 2022 – no abstracts concerning this topic

PARIS 2022 ESMO congress

PARIS FRANCE
9-13 SEPTEMBER 2022

V Manasek, WoCoVA 2022

ORIGINAL PAPER
General/surgery/internal

THE INTERNATIONAL JOURNAL OF CLINICAL PRACTICE WILEY

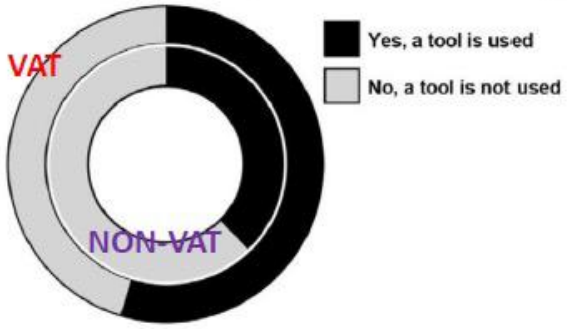
The state of vascular access teams: Results of a European survey

Noemí Cortés Rey[1] | Fulvio Pinelli[2] | Fredericus H.J. van Loon[3] | Jennifer Caguioa[4] | Gema Munoz Mozas[5] | Vincent Piriou[6] | Ulf Teichgräber[7] | Didier Lepelletier[8] | Baudolino Mussa[9]

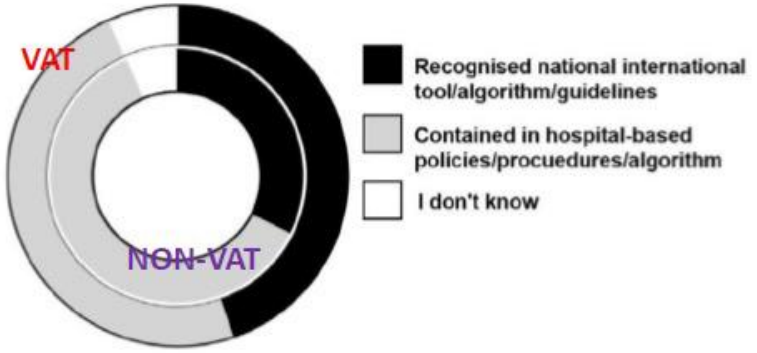
- Feb 2020 – Sep 2020
- 20 questions
- 1449 respondents (physicians, nurses, anesthetists, radiologists and surgeons)
- Public and private institutions ranging in size
- Spain, Italy, UK, France, Germany and the Netherlands

USE OF TOOLS FOR APPROPRIATE SELECTION

(A) Do you use a tool in your institution to help define the type of vascular access device that is most suitable for the patient and its IV therapy?



(B) Which of the following is the most appropriate description of the tool?



Cortes Rey N et al. Int J Clin Pract. 2021

IEO
Istituto Europeo di Oncologia

F Pinelli, WoCoVA 2022

USE OF TOOLS FOR APPROPRIATE SELECTION BY ROLE

For IV nurses that place vascular access devices, a high proportion utilise a tool (86%-100%)

Other roles, such as anaesthetists and surgeons, are less likely to utilise a tool (25%-57% and 41%-70%).

Cortes Rey N et al. Int J Clin Pract. 2021

IEO
Istituto Europeo di Oncologia

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IS IT A MATTER OF CHANGE ?

CHANGE

"Change is the essence of life. Be willing to surrender what you are, for what you could become".

MANY THANKS FOR YOUR ATTENTION

Roberto Biffi, MD, PhD, FSPS
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