Names of speakers

Agenda

Topic

Background for today's Meeting

- Venous access is critical for ALL cancer patients
- Both ChemoPorts and PICCs have a place in the Mx
- Irrespective of individual preference, some patients are best suited for one and not the other

PICC
a fight with
cancer

Objective of today's Meeting is PICC

- Understanding Global Guidelines related to PICC
- Understanding Indian Practices
- Understanding and resolving barriers
- Towards consensus guidelines for PICC use in India

PICC
a fight with
cancer

"Although … venous access …. may seem minor, it can … dramatically affect a patient's ability to receive appropriate treatment"

Central venous catheter care for patient with cancer: ASCO clinical practice guideline: https://ascopubs.org/doi/full/10.1200/JCO.2012.45.5733

ASCO GUIDELINES

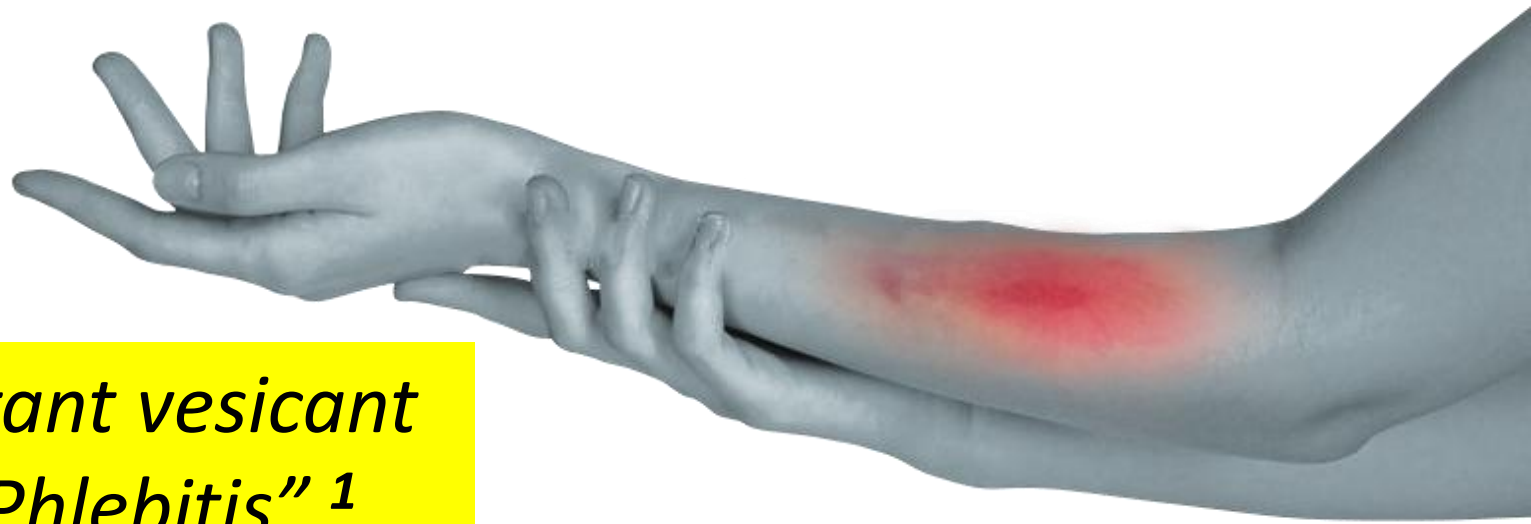
Do we need an Indian Algorithm on how to use PICC in our cancer patients?

YES!

1. **Is Awareness lacking ?**
2. **We are not making full use of training opportunity & material ?**
3. **Casual approach is leading to significant complications ?**
4. **Dedicated Venous Access team needs to be strengthened ?**
5. **Several unique Indian experiences has led to unique solutions ?**

Understanding Global Guidelines

LACK OF VENOUS ACCESS MAY PREVENT CONTINUUM OF CHEMOTHERAPY FOR YOUR PATIENTS



*"**70%** patients receiving irritant vesicant chemotherapy experiences Phlebitis"* [1]

*"**22%** patients receiving irritant vesicant chemotherapy experience Extravasation"* [2]

This fact comes as a surprise to most oncologists

PICC a fight with cancer

1. Nekuzad N et al. /IJPR(2012).11(4):1065-1072
2. International Journal Of Caring Sciences;2012; May-August; Vol 5;Isuue 2; 192-202

Algorithm of Venous Access Device Selection- Global Guidelines

MAGIC (Michigan Appropriateness Guide for Intravenous Catheter)

1. Peripheral IV Cannula
2. UG guided peripheral IV Cannula

Upto 5 days use

3. Midline Catheters
4. Acute Central Venous Catheters

For critically ill patients

5. PICC
6. Tunneled catheters
7. Port

For cancer patients receiving CT

Algorithm of Venous Access Device Selection- Global Guidelines

MAGIC (Michigan Appropriateness Guide for Intravenous Catheter)

Irritant / Vesicant Infusions

	6-14 days	15 – 30 days	> 30 days
PICC			
Tunneled Catheters			
Port			

Appropriate | Neutral | Inappropriate | Disagreement

Frequent Phlebotomy

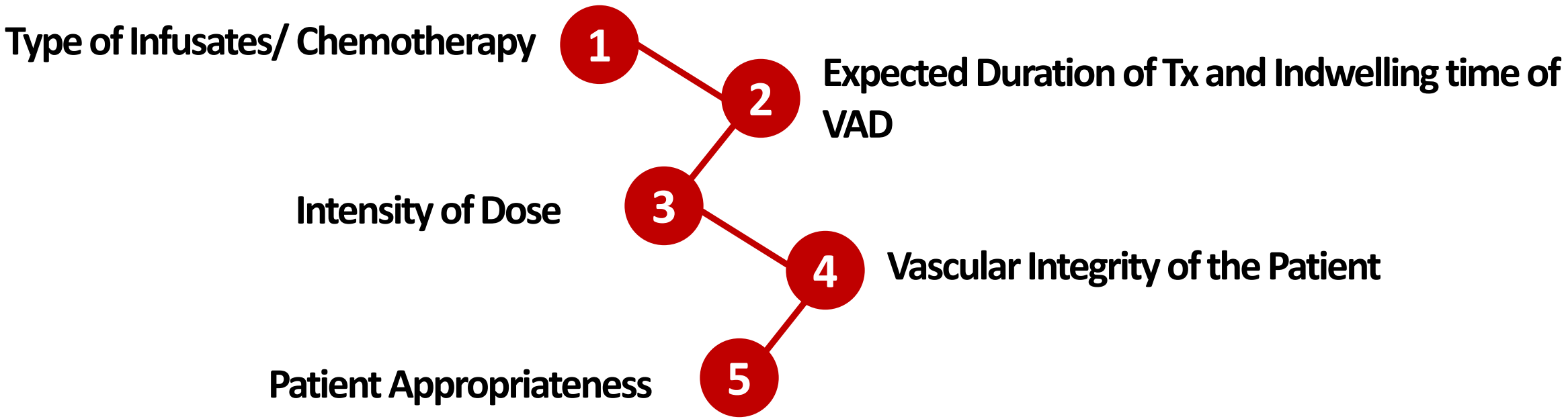
	6-14 days	15 – 30 days	> 30 days
PICC			
Tunneled Catheters			
Port			

Appropriate | Neutral | Inappropriate | Disagreement

Summary:

1. PICC recommended for vesicant / irritants
2. PICC recommended from day 1 to long term
3. PICC recommended for patients requiring frequent phlebotomy (independent of type of infusates):
4. For long term usage , all three are possible (PICC, Tunneled Catheter, Port) – select based on patient factors

Creating Indian Algorithm : What parameters to focus on?



PICC
a fight with
cancer

Type Of Chemotherapy

Most Chemotherapy Agents Are Vesicant / Irritant or Both

Vesicant

Anthracyclines: Doxorubicin, Epirubicin, Daunorubicin, Idarubicin, Dactinomycin

Vinca Alkaloids: Vincristine, Vinblastine, Vindesine, Vinorelbine, Vinflunine

Alkylating Agents: Mitomycin-C, Mechlorethamine, Carmustine

Irritants

DNA-intercalating Antibiotics: Mitoxantrone, Aclarubicin

Epipodo-phyllotoxin: Etoposide, Teniposide

Antimetabolites: Fluorouracil, Floxuridine

Alkylating Or DNA-binding: Cisplatin, Carboplatin, Dacarbazine, Oxaliplatin

Others Paclitaxel, Docetaxel, Bleomycin

- **Consider CVAD for all vesicant / irritant drugs to avoid any vascular complications**
- **Preventing extravasation and thrombosphlebitis**
- **Avoiding frequent pricks**
  - **Phlebotomy (Blood sampling)**
  - **Repeated infusion (including Blood products)**

PICC a fight with cancer

Tx duration & Indwelling Time

One PICC may be One prick in patient's Tx Journey

PICC line is intended for patients requiring up to 12 months

PICC in dwelli

A PIC

arm for as long as 12 months.[15]

Four international authorities have endorsed use of PICC for 12 to 34 months

PICC a fight with cancer

Tx duration & Indwelling Time

Global Evidence

269 PICC
250 patients
98 % solid tumors

55,293
catheter days

Median 184 days
Range 15 - 1384

Support Care Cancer
DOI 10.1007/s00520-014-2387-9

ORIGINAL ARTICLE

Peripherally inserted central cath… …ncer patients: 5-year results of…

Paolo Cotogni · Cristina P…
Baudolino Mussa…

Abstract
Purpose Fe… use of periph… er chemothera… focused exclus… prospective stud… PICCs over a 5-… requiring long-ter…
Methods Since Jun… …ncology outpatient candidates for PICC inser… …ere consecutively enrolled and the incidence of catheter-related complications was investigated. The follow-up continued until the PICC removal.
Results Two hundred sixty-nine PICCs in 250 patients (98 % with solid malignancies) were studied, for a total of 55,293 catheter days (median dwell time 184 days, range 15–1,384). All patients received HPN and 71 % received chemotherapy during the study period. The incidence of catheter-related bloodstream infections (CRBSIs) was low (0.05 per 1,000 catheter days), PICC-related symptomatic thrombosis was …mechanical …0.63 per 1,000 cath… …ation rate was 17.5 % (0.85 per … and PICCs were removed because of …ons only in 7 % of cases. The main findings of this study were that, if accurately managed, PICCs can be safely used in cancer patients receiving chemotherapy and/or HPN, recording a low incidence of CRBSI, thrombosis, and mechanical complications; a long catheter life span; and a low probability of catheter removal because of complications.
Conclusions Our study suggests that PICCs can be successfully utilized as safe and long-lasting venous access devices in non-hospitalized cancer patients.

Keywords Venous access · Venous access device · Home care · Central venous catheter · Oncology

Introduction

1384 days = 3.8 years
In India, several centers have used PICC for 12 to 18 months

PICC a fight with cancer

Do we ever estimate what the patient will go through during the expected journey of systemic therapy?

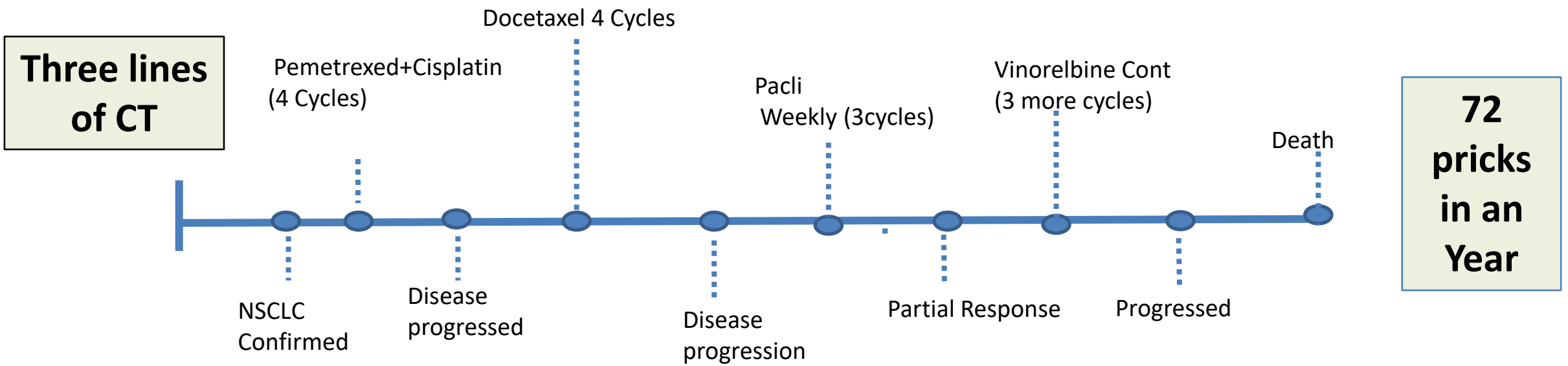
1. **No of pricks (CBC/Blood tests + CT)**
2. **Lines of therapy that patient might get (eg Lung Ca and Ovarian Ca patient invariably will receive multiple lines of infusional chemotherapy – including platinum)**

Remember both PICC and PORT can be used for long term therapy

Intensity of Dose

Case Study (Hypothetical case)

NSCLC with no driver mutation – No over expression of PDL-1



Assuming only one episode of febrile neutropenia

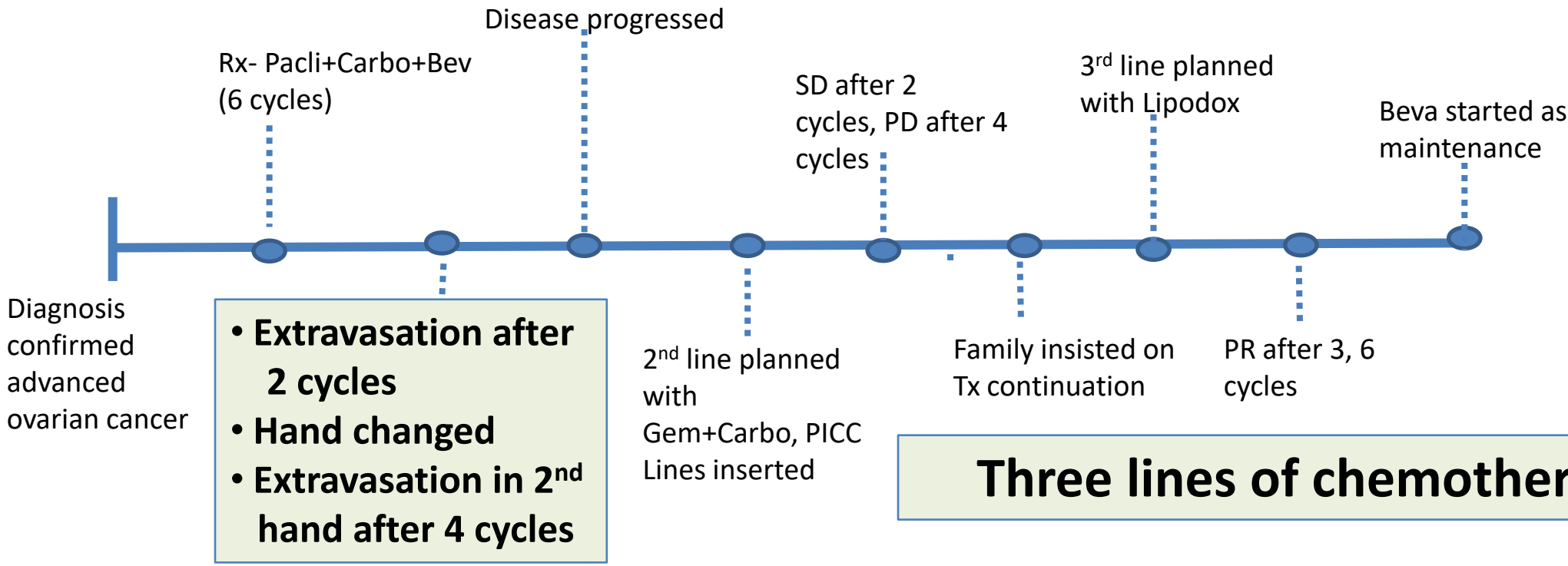
Avg blood sampling during treatment – 25 Needle pricks

Yet, we never think of using PICC in patients with Lung Ca requiring CT!

Vascular Integrity of Patient

Case Study (Hypothetical case)

58 year old Ca ovary patient with obesity and venous status compromised



Venous status to be checked for every patient before starting chemotherapy AND before each cycle / infusion

Understanding Barriers –

PICC
a fight with
cancer

Outcomes, cost comparison, and patient satisfaction during long-term central venous access in cancer patients: Experience from a Tertiary Care Cancer Institute in South India

K. Govind Babu,
M. C. Suresh Babu,
D. Lokanatha, Gita R. Bhat

Department of Medical Oncology, Kidwai Memorial Institute of Oncology, Bengaluru, Ka India

A B S T R A C T

Introduction: Prolonged treatment, frequent administration of chemotherapy, antibiotics and blood products in cancer patients requires long term venous access. Central venous catheters (CVC) inserted into the subclavian vein or internal jugular vein, peripherally inserted central venous catheters (PICC) and chemoport (CP) are

was
lyze
tient

Median catheter indwelling period

PICC	59 days (20 days – 313 days)
ChemoPort	137 days (70 days – 258 days)

Table 3: Cost comparison

	Median±SEM (Indian rupees) (US dollars)		*P*
	Group 1 CVC and PICC	Group 2 CP	
Total cost (Rs.)	4480±1434.49 (68.53±21.94)	24,150±11,026.22 (369.44±168.67)	<0.0001

Mann-Whitney U-test *P*<0.0001, significant. PICC – Peripherally inserted central catheter; CVC – Central venous catheter; CP – Chemoports; SEM – Standard error of mean

Govind Babu et al: IJMPO original article

Table 5: Complication during insertion of central venous access devices

	Type of catheter			Total *n* (%)
	CVC	PICC	CP	
Major complications				
Pneumothorax	4	NA*	0	4 (3.7)
Hemothorax	1	NA	NA	1 (0.93)
Malposition	5	0	1	6 (5.55)
Total				11 (10.18)
Major complications				
Hematoma	1	0	0	1 (0.93)
Pain (shoulder/ear)	10	0	0	10 (9.26)
Difficulty in insertion (>2 attempts)	14	0	0	14 (12.96)
Difficulty in negotiating the catheter below the clavicle	1	NA	0	1 (0.93)
Total				26 (24.08)

Govind Babu et al: IJMPO original article – KIDWAI data

Availability of Trained Resources

> Br J Nurs. 2013 Oct 24-Nov 13;22(19):S9-15. doi: 10.12968/bjon.2013.22.Sup19.S9.

Nurse-led PICC insertion: is it cost effecti

Graham Walker, Alistair Todd

PMID: 24350393 DOI: 10.12968/bjon.2013.22.Sup19.S9

Abstract

Aims: Repeated attempts to cannulate
expend substantial staff time.For
catheter(PICC) may be used
a PICC costs three time
to compare inser
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Mate
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asses
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Result
nurse g
nurse gr

Conclusi
screening
volume se

groups
tion was
fection rates and

increased cost (42%) over the
ment before insertion was higher in the
gher in the radiologist group.

ty of PICCs can be safely performed without x-ray
is likely to be the most cost-effective solution for large

If your institution policy permits it, trained nurses can insert PICC

Cost reduced by 60%

Insertion rate 91.6 %

Complication rate 3.8 %

Guided or Blind Technique

EJA

Eur J Anaesthesiol 2020; **37**:344–376

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

Ultrasound-guided cannulation of any central vein for long-term central vascular devices

(1) The quality of evidence on which to base recom-
mendations is weak, with data from only
randomised controlled trials with high
(2) We recommend ultrasound gui
of long-term vascular a
shown to signif
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ASSOCIATION FOR VASCULAR ACCESS

POSITION PAPE

Ultrasound Guida
Vascular Acces
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d for all vascular
qualified to perform
tion of peripheral, arterial, and

nclude a detailed documented training process
ultrasound and imaging technologies being utilized.

raining plan and commitment to ongoing competency assessment.

ed hospital policy and procedure which includes the discipline, procedure, education, minimum requirements and device disinfection processes are addressed.

- The vascular access specialist or applicable healthcare clinician, must meet the education and clinical practice requirements by the designated professional board within their state of practice.

USG guided insertion reduces all complications (mechanical, infections, thrombosis) Making it cost effective

PICC insertion

BD India – Joining hands to strengthen your team

COE: Center of Excellence across country

Center of Excellence:-

5 Centers to train staff in PICC insertion, care & maintenance

online course

BD PICC Online course:-

Train staff from the comfort of your hospital

BD India clinical expert can also come to your center for onsite training & hand holding

PICC placer

Creating PICC placer through COEs

Tata Memorial Hospital –Mumbai

27 Training sessions more than 10 years

More than **100** HCPs trained on PICC placement

RGCI- Delhi

29 Training sessions in the last 7 years

More than **77** HCPs trained on PICC placement

HCG Cancer Center- Bangalore

6 Training sessions in last 3 years

More than **12** HCPs trained on PICC placement

Amrita Institute of Medical Science

2 Training sessions on PICC insertion

More than **8** HCPs trained on PICC placement

Tata Medical Center – Kolkata

4 Training sessions on PICC insertion in last 3 years

More than **12** HCPs trained on PICC placement

*to be updated as per new trainings

PICC insertion; C&M

Building Ecosystem across centers

In-service program for ongoing training of Nurses on Care and Maintenance

- 2019: • **108** ISPs; **3281** Nurses trained across India
- 2020: • **32** ISPs; **1221** Nurses trained across India
- 2021: • **10** ISPs done till now ..and still counting

PICC Insertion workshop by clinical team

- 2019: • **52** workshop to train nurses across India
- 2020: • **36** workshop to train nurses across India
- 2021: • **21** workshop to train nurses across India

*to be updated as per new trainings

PICC Care

Care of PICC needs adherence to all aspects of checklist – no shortcuts

Suture less stabilization device

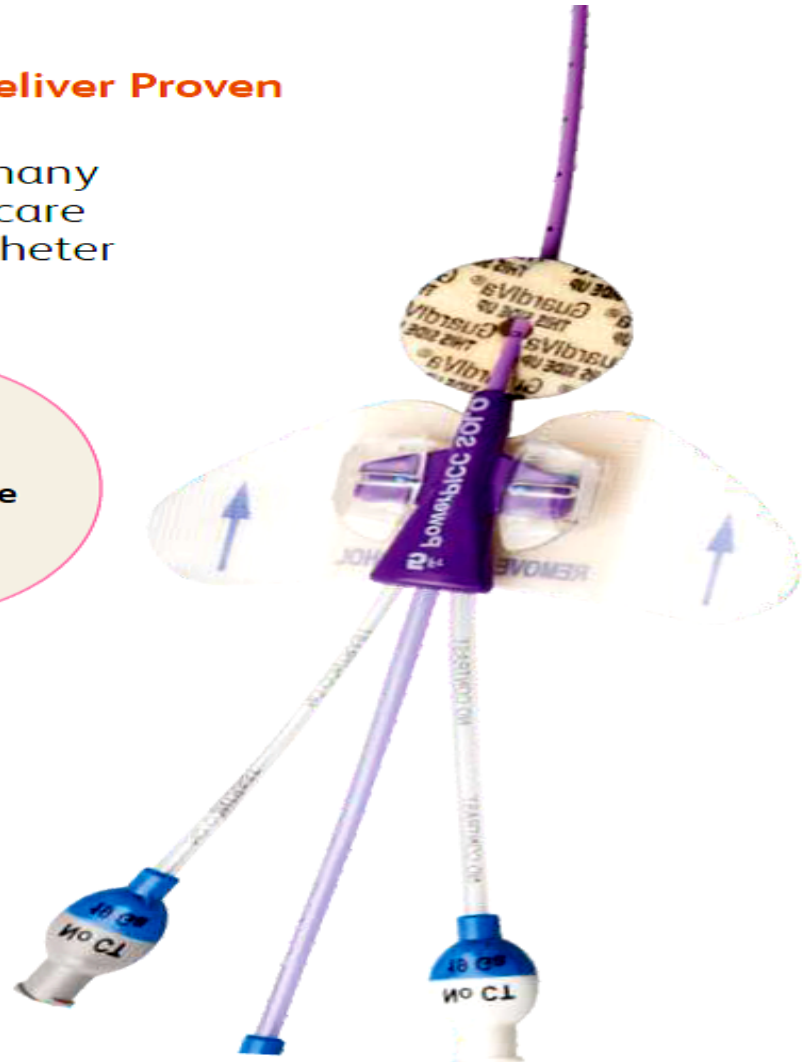
Pre-filled saline flush

PICC Stabilization Device

The BD Statlock® PICC/CVC Stabilization Device Deliver Proven Clinical Benefits

StatLock® Stabilization Devices have demonstrated many significant advantages, for both patients and healthcare providers, compared to conventional methods of catheter securement.

- **Eliminates need for suture**
- **Eliminate accidental needlesticks[6]**
- **Reduce unschedule restarts[6]**
- **Reduce catheter complications[2]**
- **Increase catheter dwell times[2]**



Pre filled saline Flush

Improve patient outcomes

Unique Syringe Design

- Single use pre-filled flush positively reduces the risk of infections
- Designed to eliminate syringe-induced blood reflux*
- Designed to prevent solution from entering a non-sterile area of the syringe**

Assured sterility

- **Terminal sterilization** for maximum sterility assurance level (SAL 10^{-6}) of solution and fluid path

Reduce the risk of medication errors

Clear Labeling

- Greater visibility of syringe contents
- Bold print for clarity
- Color and bar coded for easy identification and verification
- Addresses The Joint Commission's requirement for medication labeling[6]

Reduce the risk of catheter damage

Standard 10 mL Syringe Diameter

- Generates significantly lower pressure (PSI) compared to standard 3 mL syringes**
- All sizes comply with PICC manufacturer flushing recommendations

Reduce waste and costs

Stubby Syringe Profile

Selecting smaller size syringes (3, 5 mL) for peripheral lines:

- Reduces storage and disposal costs
- Minimizes environmental waste

Summary (1)

CVADs recommended for ALL vesicant and/or irritant infusates

- **Also Chemo agents having ph < 5 or > 9**
- **Infusates with Osmolarity > 600 msOm/L**
- **TPN**
- **Blood and blood products**

Summary (2)

- **Need to make habit of formally checking (and documenting) venous status for every patient who will be starting chemotherapy**
- **Every center must provide option of ChemoPort AND PICC**
- **Contrary to common miconception, PICC has been successfully used for short, intermediate as well as long term therapy (more than 1 year)**
- **Benefits in BOTH continuous AND intermittent chemotherapy**

Thank you

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