UNIVERSITÀ CATTOLICA del Sacro Cuore

GAVeCeLT
Gli Accessi Venosi Centrali a Lungo Termine

The GAVeCeLT algorithm for choosing the most appropriate venous access device

Mauro Pittiruti and the GAVeCeLT

Catholic University Hospital, Rome - Italy

Why an algorithm?

A structured approach to the choice of the VAD is recommended by many guidelines and by many opinion leaders.

Advantages of an algorithm:

- Reduces the opinion-based variability
- Facilitates the education of the clinicians
- Improves the quality of care

Which algorithm?

- GAVeCeLT has developed an algorithm for the choice of the most appropriate VAD, based on the best evidence available in the international guidelines
- The algorithm has been recently adopted by the Hospital policies of the Catholic University Hospital (Rome, Italy)

Which VAD ?

Any peripheral or central VAD used for infusion, blood sampling and/or monitoring in adult patients

- VADs for dialysis/pheresis are excluded
- VADs for children and neonates are excluded (separate algorithm)

First step: choice between a peripheral VAD and a central VAD

Indications to a central VAD

- I.V. solutions with pH < 5 or > 9
- Drugs with osmolarity > 600 mOsm/l
- Parenteral nutrition
- Vesicant drugs and any drug potentially associated with endothelial damage
- Hemodynamic monitoring
- Repeated blood samples
- Need for medium or long term i.v. line (months or years)

Indications to a peripheral VAD

- pH between 5 and 9
- Non vescicant
- Non irritant
- Needed for less than 4-6 weeks

Necessità accesso venoso nel paziente adulto per infusione, prelievi o monitoraggio emodinamico

Accesso venoso periferico
pH 5-9
farmaci con osmolarità <600
farmaci non vescicanti
farmaci non irritanti

Agocannula
vene superficiali del braccio disponibili
accesso periferico < 1 settimana
uso esclusivamente intraospedaliero

Cannula periferica lunga
vene superficiali del braccio non disponibili
accesso periferico > 1 settimana

Catetere Midline
accesso periferico > 3 settimane
accesso periferico ad uso extraospedaliero

Accesso venoso centrale
pH >9 o <5
farmaci con osmolarità >600
farmaci vescicanti
farmaci irritanti
nutrizione parenterale con osmolarità >800
necessità di prelievi ripetuti e frequenti
necessità di monitoraggio emodinamico

USO INTRA-OSPEDALIERO

Catetere ad inserzione periferica PICC
vene profonde del braccio disponibili
soltanto in elezione

Catetere ad inserzione centrale CICC
vene profonde del braccio non disponibili
inserzione in condizioni di urgenza
necessità di catetere 'medicato'
necessità di > 3 lumi

Catetere ad inserzione femorale
non tunnellizzato
in situazioni di emergenza
tunnellizzato
presenza di ostruzione vena cava superiore

USO EXTRA-OSPEDALIERO
Day Hospital, Domicilio, Hospice

ACCESSI A MEDIO TERMINE (< 4 MESI)

PICC
- vene profonde del braccio disponibili

CICC tunnellizzato
- vene profonde del braccio non disponibili

ACCESSI A LUNGO TERMINE (> 4 MESI)

uso episodico: < 1/settimana:
Port

uso frequente: > 1/settimana:
Catetere Cuffiato Tunnellizzato CCT
ad inserzione periferica/centrale/femorale

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Any need for infusion therapy, blood samples, emodynamic monitoring in an adult patient

Peripheral VAD

pH between 5 and 9
Non vescicant
Non irritant
Needed for less than 4 wks

Short peripheral cannula
Superficial vein of the arm available
Needed for < 1 week
Intra-hospital use

Long peripheral cannula
Superficial vein of the arm unavailable (US-guided insertion in deep veins of the arm)
Needed for < 1 week but < 3 weeks
Intra-hospital use

Midline catheter
Superficial vein of the arm unavailable US-guided insertion in deep veins of the arm)
Needed for > 3 weeks
Intra and extra-hospital use

Central VAD

I.V. solutions with pH < 5 or > 9
Drugs with osmolarity > 600 mOsm/l
Parenteral nutrition (>800 mOsm/L or >4-6 weeks)
Vesicant drugs and any drug potentially associated with endothelial damage
Hemodynamic monitoring
Repeated blood samples
Need for medium or long term i.v. line (months or years)

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In-Hospital use

PICC ("brachially" inserted CVC)
First choice unless contraindicated (see table)

CICC ("cervical/thoracically" inserted CVC)
Deep arm veins unavailable or not suitable (see table)
Emergency
Anti-microbial catheter (until antimicrobial PICCs available on Italian the market)
More than 3 lumens needed or number of lumens conflicting with catheter-to-vein ratio

FICC ("Femorally" inserted CVC)
NON TUNNELED: emergency
TUNNELED: SVC obstruction

Extra-Hospital use
Day-Hospital, Home care, Hospice

Medium term (< 4 months)

PICC
As a first choice unless contraindicated

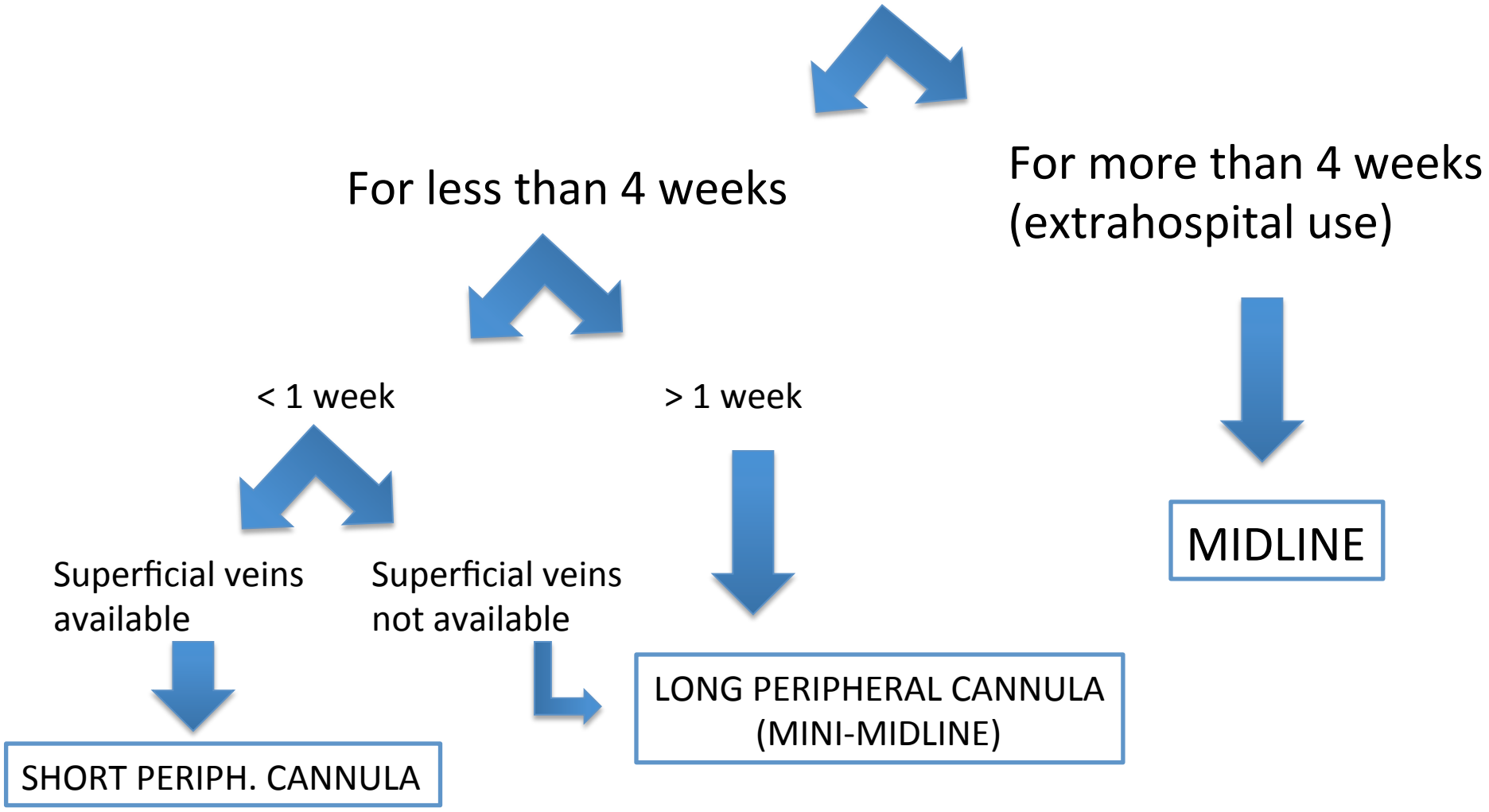
CICC
When PICC contraindicated (see table)
Possibily tunneled

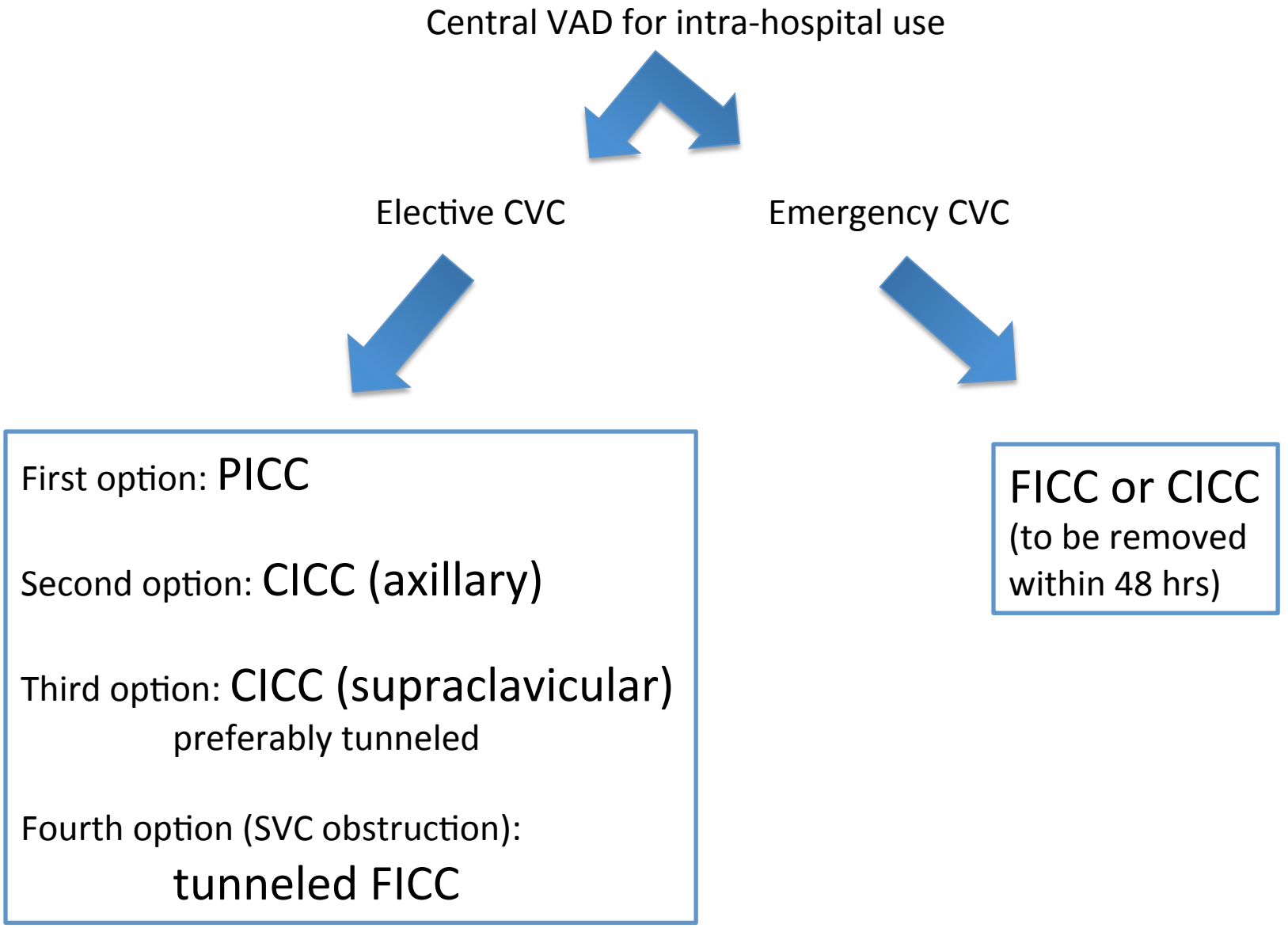
Long term (> 4 months)

Episodic access (frequency < 1/week)
PORT (brachial/chest/groin – see table for indications/contraindications)

Frequent access (frequency > 1/week) and/or continous infusion > 4 days/week
TUNNELED-CUFFED DEVICE (brachial/chest/groin – see table for indications/contraindications)

Peripheral venous access




Central VAD for intra-hospital use
Elective CVC
Emergency CVC
First option: PICC
Second option: CICC (axillary)
Third option: CICC (supraclavicular)
preferably tunneled
Fourth option (SVC obstruction):
tunneled FICC
FICC or CICC
(to be removed
within 48 hrs)

Extra-hospital venous access

Medium term (< 4-6 months)

First option: PICC, tunneled or not

Second option (if PICC contraindicated):
tunneled CICC

Third option (SVC obstruction):
tunneled FICC

Long term (> 4-6 months)

For infrequent use (< 1/week):
chest port
PICC port

For frequent use (> 1/week):
tunneled-cuffed CICC
tunneled-cuffed PICC
tunneled-cuffed FICC