



THE EXPERIENCE IN THE USE OF LONG PERIPHERAL CATHETER: MINI-MIDLINE

Victoria Armenteros-Yeguas, Oiane Báez-Gurruchaga, Laura González-Blas,
Beatriz Landa-Portilla, Selene Lurueña-Rodríguez, Maitane Zaballa-Canive,
Arantxa Picón-Santamaría, Maria Aranzazu Tomás-López, Estíbaliz Cristóbal-Domínguez

**Bioaraba Health Research Institute, Vascular Care Research Group
Basque Health Service, Araba University Hospital, Intravenous Therapy Team**



The authors have no conflicts of interest to declare in relation to this presentation



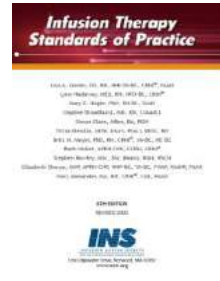
Introduction

The long peripheral catheter
mini-Midlines



INDICATIONS

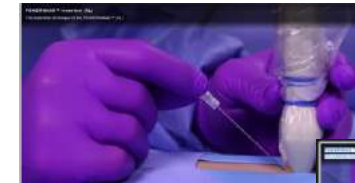
- 6 days up to 4 weeks
- Non-irritant drugs



Approximately 8-15cm in length
Polyurethane
Deep vein cannulation
Lower cost than midline



Modified Seldinger technique
(catheter over wire)



<https://www.smiths-medical.com/powerwand/resources>

INSERTION TECHNIQUE

Accelerated Seldinger Technique



<https://www.bd.com>

Two- thirds of the catheter inside the vein

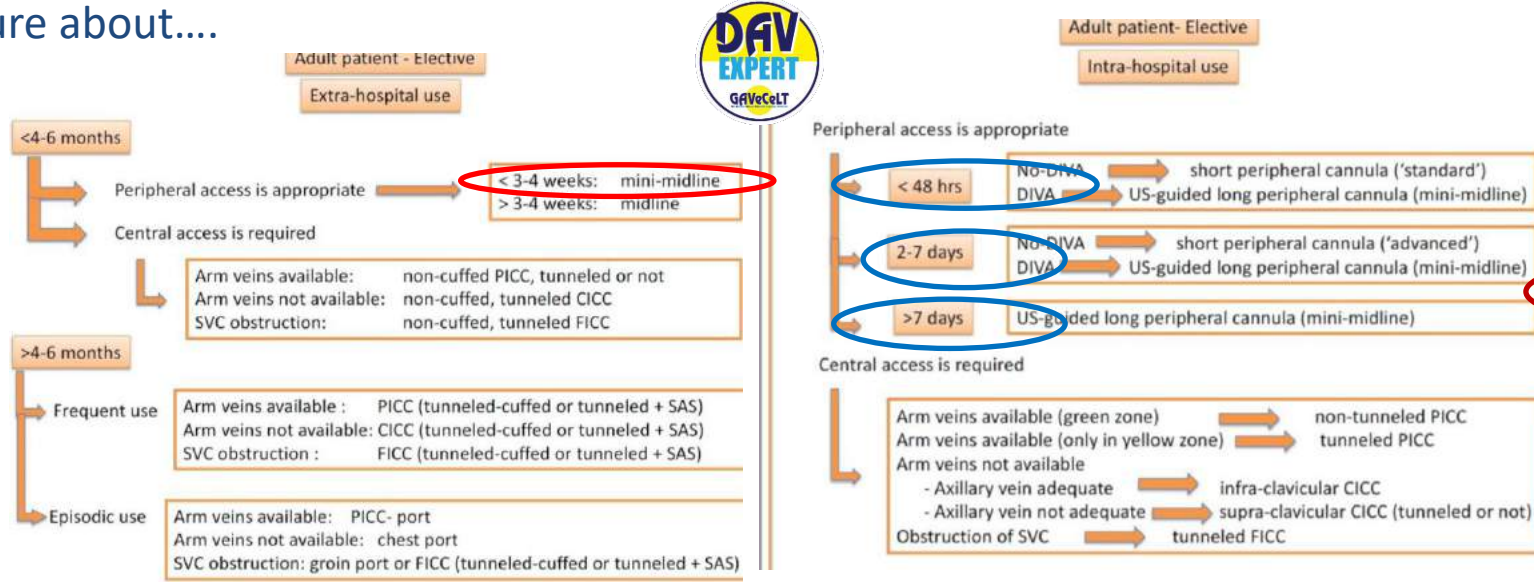
Introduction

Annals of Internal Medicine SUPPLEMENT
 The Michigan Appropriateness Guide for Intravenous Catheters (MAGIC): Results From a Multispecialty Panel Using the RAND/UCLA Appropriateness Method
Wineet Chopra, MD, MSc; Scott A. Flanders, MD; Sanjay Saint, MD, MPH; Scott C. Wolter, MD; Naomi P. C. Gray, MD; Nasia Solder, MD, PhD; Scott O. Terricola, MD; Rajar Suresh, MD, PhD; Nancy Mounsey, BSN, RN; Stephen Wiseman, PharmD; Mauro Pittiruti, MD; Elie A. Akl, MD, MPH, PhD; Agnes Y. Lee, MD, MSc; Anthony Courney, MD; Lakshmi Swaminathan, MD; Jack LeDense, MD; Carol Becker, MHA; Sarah L. Krein, PhD, RN; and Steven J. Bernstein, MD, MPH

| Device Type | Proposed Duration of Infusion | | | |
|---|--|---|---|---|
| | ≤5 d | 6-14 d | 15-30 d | ≥31 d |
| Peripheral IV catheter | No preference between peripheral IV and US-guided peripheral IV catheters | | | |
| US-guided peripheral IV catheter | | US-guided peripheral IV catheters preferred to peripheral IV catheters if proposed duration is 6-14 d | | |
| Midline catheter | Midline catheters preferred to PICC if proposed duration is ≤14 d | | | |
| Nontunneled/acute central venous catheter | Central venous catheter preferred to PICC for use ≤14 d in critically ill patients | | | |
| PICC | Disagreement on appropriateness of PICC for durations <5 d | PICC use appropriate if proposed duration is ≥6 d; PICCs preferred to tunneled catheters for durations of 15-30 d | | |
| Tunneled catheter | | | Tunneled catheter neutral for difficult IV access for use ≥15 d | No preference between tunneled catheter or port for use ≥31 d |
| Port | | | | |

Appropriate Neutral Inappropriate Disagreement

Literature about....



Quicker and easier to insert
 Less risk of phlebitis
 Longer duration



Differentiating itself from longer catheters (midline)

Review
JVA The Journal of Vascular Access
 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 Scoppettuolo³, Peter Carr⁴, Evangelos Konstantinou⁵, Gloria Ortiz Miluy⁶, Massimo Lamperti⁷, Godclieve Alice Goossens⁸, Liz Simcock⁹, Christian Dupont⁹, Sheila Inwood¹⁰, Sergio Bertoglio¹¹, Jackie Nicholson¹², Fulvio Pinelli¹³ and Gilda Pepe¹



Introduction: experience in Araba University Hospital Basque Country, Spain

Since 2015...

Polyurethane
10 cm

Aseptic conditions

Accelerated Seldiguer Technique
US guided technique



VAD

Management



Mini-Midline care
Maintenance protocol

Objective

To describe the clinical outcomes of the mini-Midlines inserted in patients admitted to Araba University Hospital (Spain)



Method

Design

→ Observational and prospective

Sample

→ Mini-Midlines inserted using accelerated Seldinger technique, guided by ultrasound and positioning the tip in the axilar vein

**Insertion
criteria**

- a) Non irritant therapies lasting >6 days long iv therapy <1 month
- b) DIVA patients

Study period

→ April 2015-June 2021

Setting

→ Araba University Hospital, Basque Country, Spain

Method

Variables

- Demographic variables
- Presence of difficult intravenous access (DIVA)
- Successful insertion proportion
- Number of attempts
- Type of therapy infused

- Duration of catheters
- Successful catheters proportion (end of treatment/death/need of central catheter)
- Incidence of adverse events
- Incidence of unexpected removal
- Association between the use of irritant drugs and the incidence of complications
- Factors association with catheter unexpected removal

Follow up period

Insertion  Removal

Data analysis

- Frequences, percentages, means, standard deviations
- Cases per 1.000 catheter days
- Chi-square: association irritant drugs-adverse events
- Chi-square, t student: factors- unexpected removal

Results

1,747 mini-Midline
1,466 patients

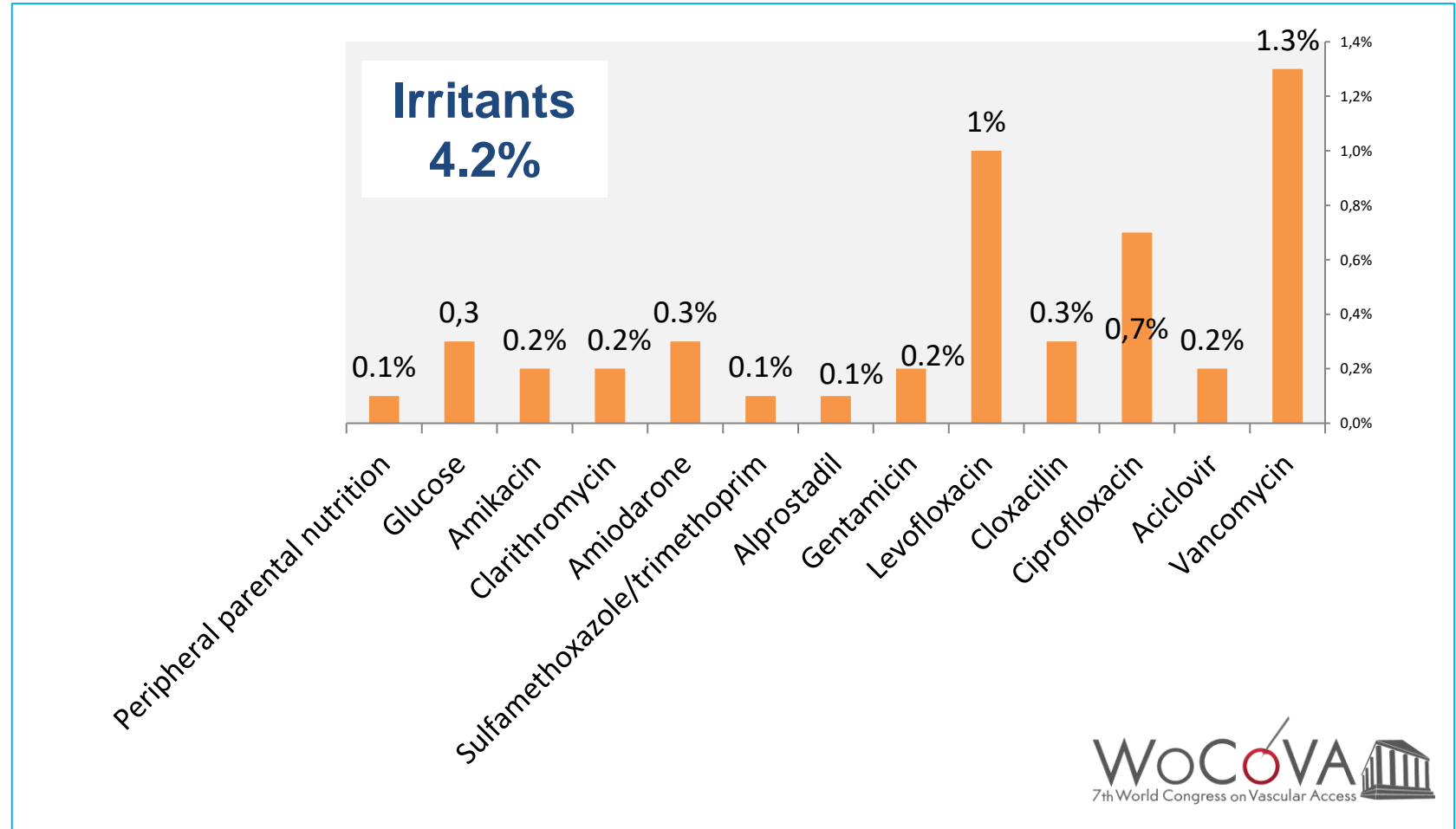
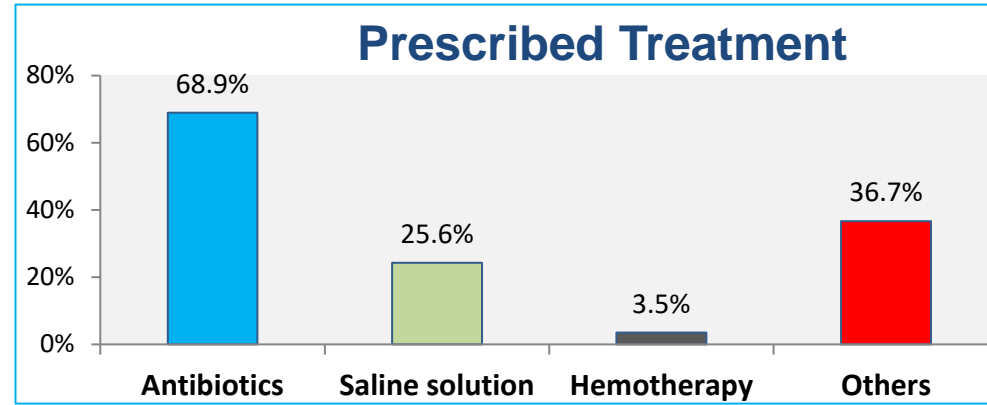
Mean age: 75.15 years
(SD= 16.45)

Presence of DIVA
90.3%



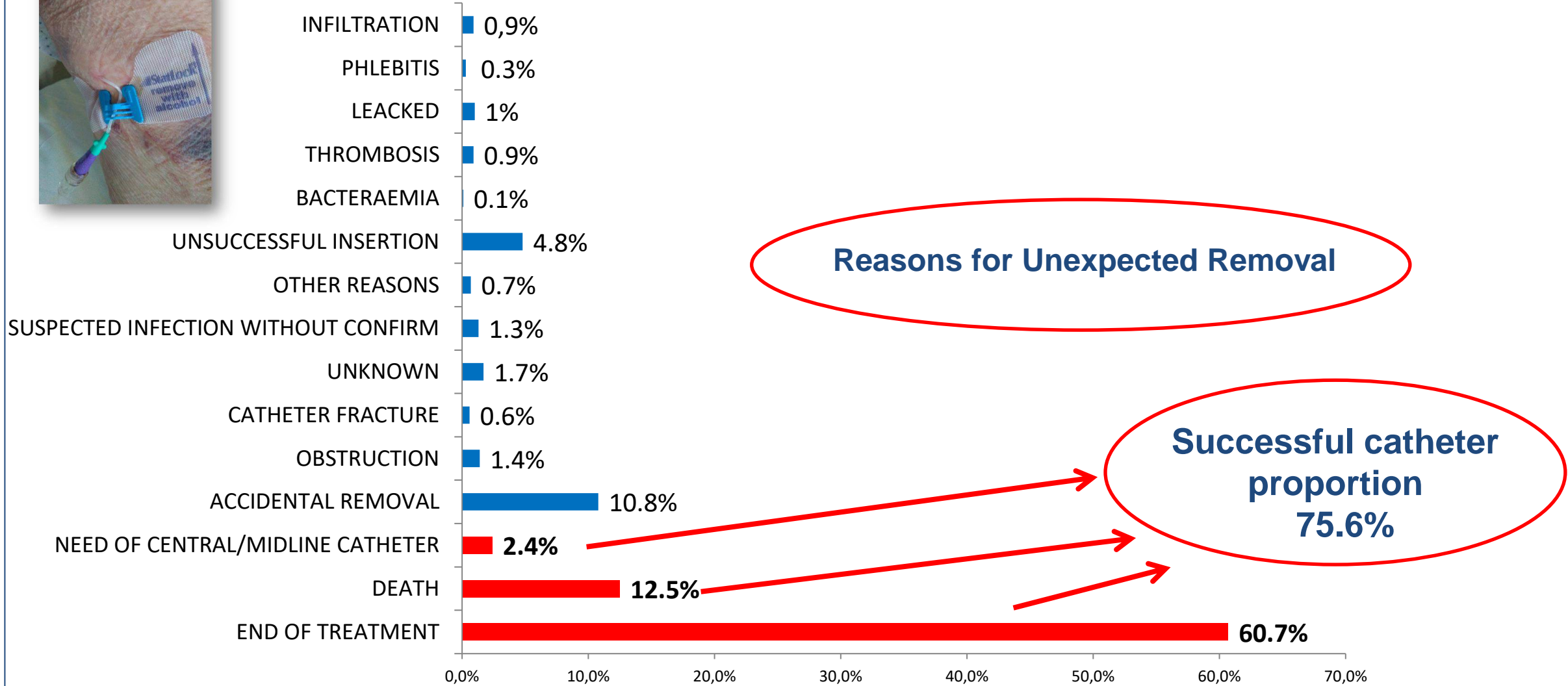
Successful insertion 95.2%
First attempt 95.1%

49.6%



Results

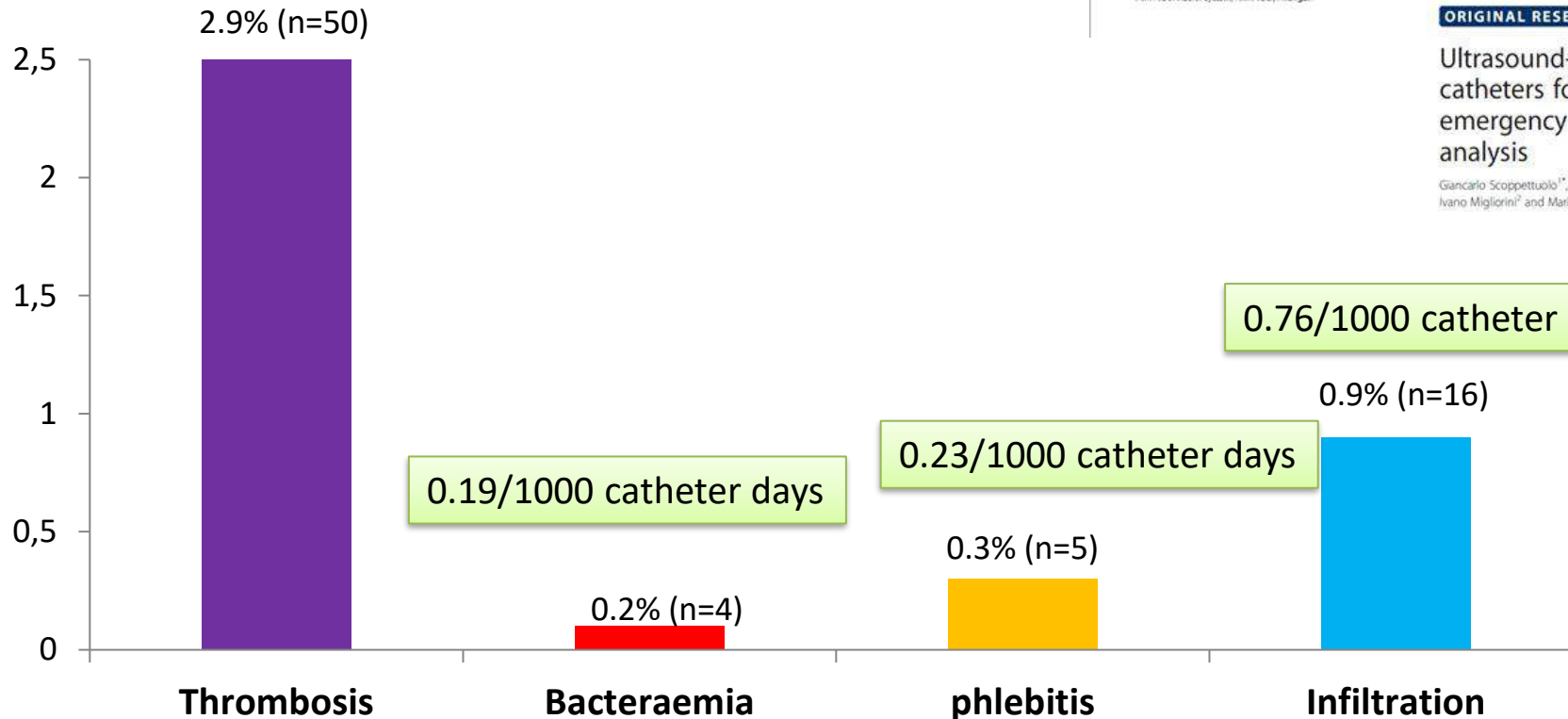
Average duration: **12.11 days** (SD: 13.55)
Total catheter days: **20,835**



Results

Adverse events

0.39/1000 catheter days



0.19/1000 catheter days

0.76/1000 catheter days

0.23/1000 catheter days



Long peripheral catheters for deep arm vein venous access: A systematic review of complications

James Badger



BRIEF REPORT

Long Peripheral Catheters: A Retrospective Review of Major Complications

Sanjiv A Patel, MD^{1*}, Tiago Araujo, MD², Luis Para Rodriguez, MD³, Claudia Ramirez Sanchez², Ashley Snyder, MPH⁴, Vineet Chopra, MD, MSc^{4,5}

¹Division of Hospital Medicine, Department of Medicine, John H. Stroger, Jr. Hospital of Cook County, Chicago, Illinois; ²Division of Post-Graduate Education, Department of Medicine, John H. Stroger, Jr. Hospital of Cook County, Chicago, Illinois; ³Department of Medicine, Rush University Medical Center, Chicago, Illinois; ⁴Division of Hospital Medicine, Department of Internal Medicine, Michigan Medicine, Ann Arbor, Michigan; ⁵VA Ann Arbor Health System, Ann Arbor, Michigan.

ORIGINAL RESEARCH

Open Access

Ultrasound-guided "short" midline catheters for difficult venous access in the emergency department: a retrospective analysis

Giancarlo Scoppettuolo^{1*}, Mauro Pittiruti², Sara Pitoni³, Laura Dolciotti¹, Alessandro Emoli¹, Alessandro Mitidieri², Ivano Migliorini² and Matia Giuseppina Annetta¹

Ultrasound-guided deep-arm veins insertion of long peripheral catheters in patients with difficult venous access after cardiac surgery

Adam Fabiani, RN¹, Lorella Dreas, MD¹, Gianfranco Sanson, RN, MSN^{1,2*}

Open Access

CrossMark

Results

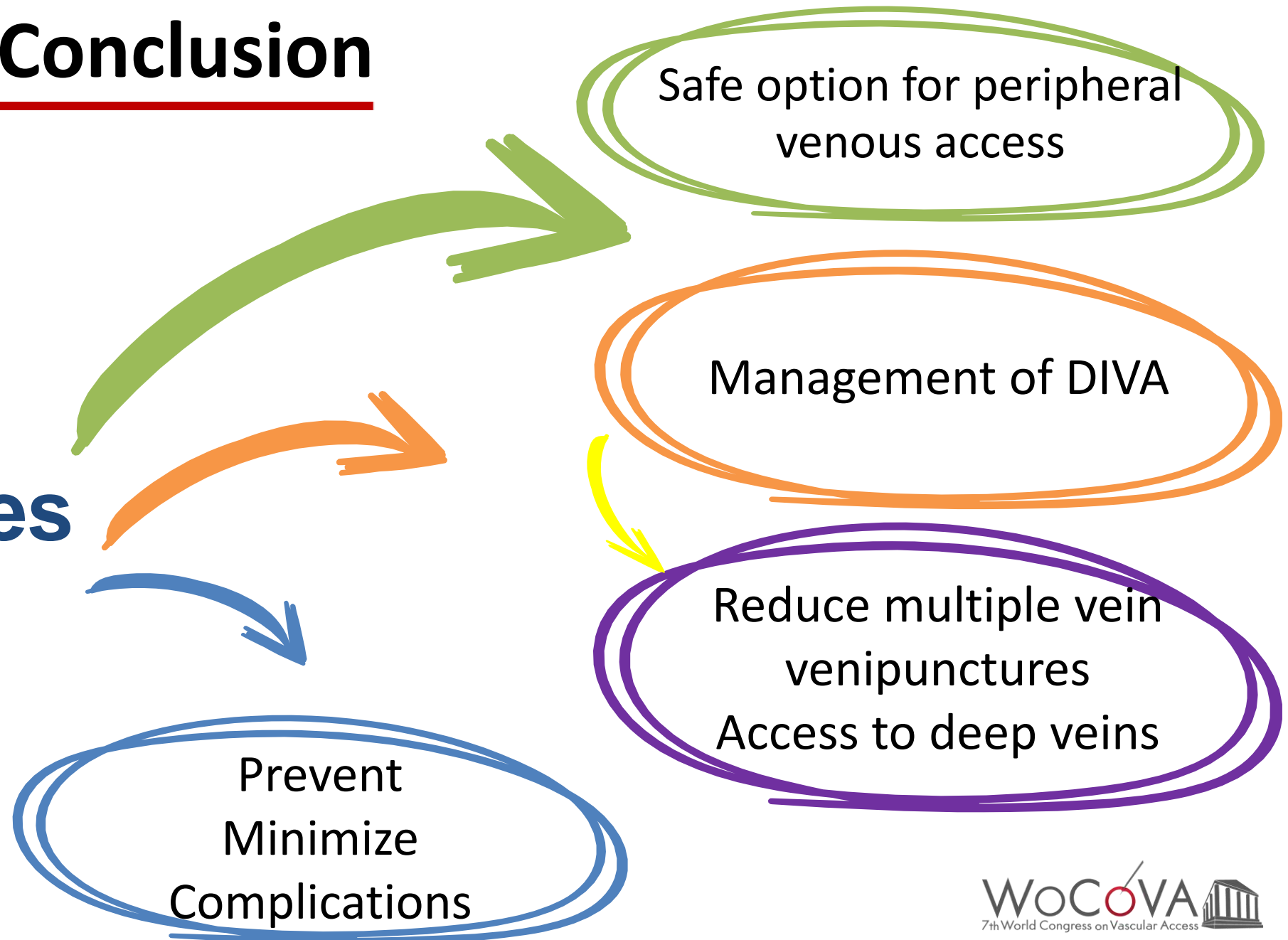
Adverse events

| Adverse Events associated with irritant drugs | | | |
|---|-------------------------------|----------------|-------|
| | Episodes x 1000/catheter days | 95% CI | p |
| Thrombosis | 0.39 | 0.328- 0.543 | 0.103 |
| Bacteraemia | 0.19 | -0.066 - 0.923 | 0.813 |
| Infiltration | 0.76 | 0.986-0.985 | 0.436 |
| Phlebitis | 0.23 | 0.994-1.00 | 0.772 |

| Factors associated with unexpected removal | |
|--|-------|
| Factors | p |
| Age | 0.656 |
| Gender | 0.227 |
| Catheter location | 0.007 |
| Number of attempts | 0.003 |

Discussion & Conclusion

Mini-Midlines



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Intravenous Therapy Team
Vascular Access Research Team
Araba University Hospital
Spain

Victoria Armenteros-Yeguas
victoria.armenterosyeguas@osakidetza.eus
@VictoriaArmen14

THANK YOU

