

CONTROVERSE PICC LINES: LE CONTRE

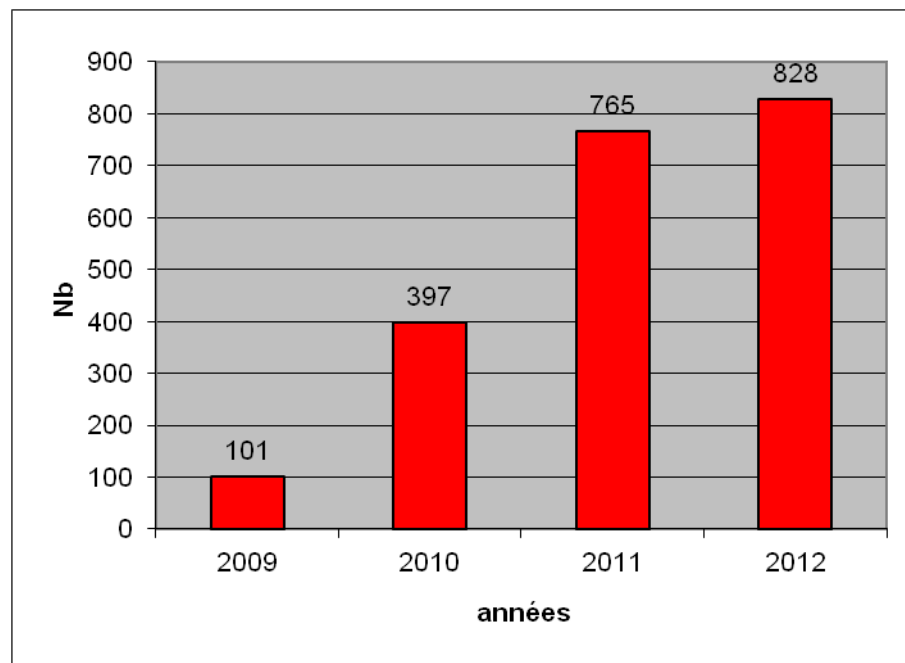
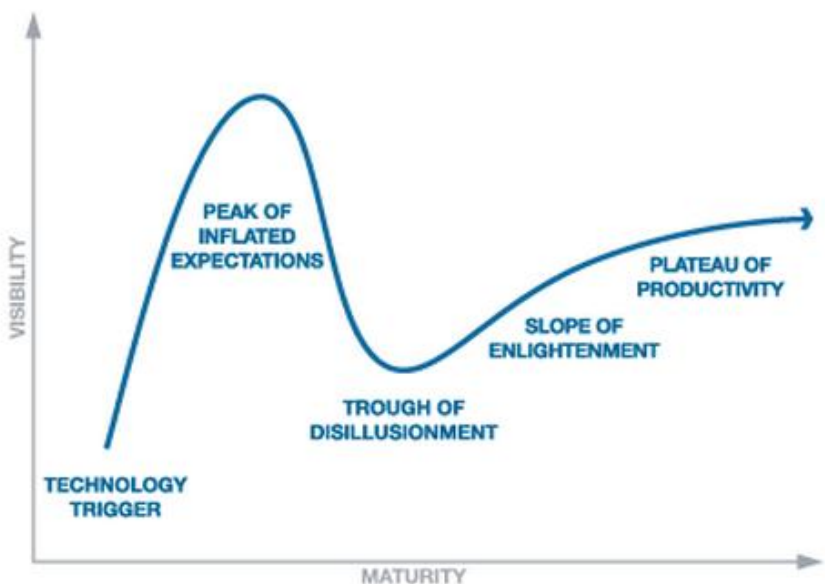
O Lesens
JNI 2013
Clermont-Ferrand



Messages

- C'est plus facile donc on en pose plus
- Au moins autant d'infections
- Plus de thromboses et d'occlusions
- Ça coûte plus cher (surtout en France)
- Pas si confortable que ça

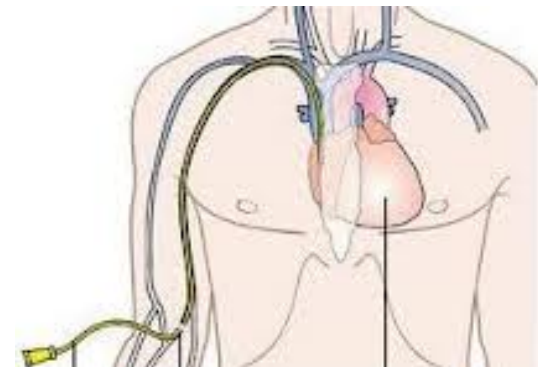
Inflation des demandes de VVC



Par ailleurs, ce n'est pas une nouveauté!

Facilité de pose?

- Longueur du cathéter est comprise entre 50 et 60 cm
- Doit être ajustée à l'anatomie du patient
- Contrôle du positionnement sous scopie
- Malposition 33% PICC vs 6% CVC
 - KIM HJ, 2010
- Qui le pose?



Facilité de pose

- ↑ Nb de CVC
 - Maintien pour les prises de sang
 - ↑ pour les nutritons parentérales
 - notamment en cancérologie, néonatalogie
 - Indications limites
- Pas d'hésitation à l'ablation/repose
 - 60% en réa (FlechterJJ, neurocrit Care 2011)



↑ des indications ➡ ↑ complications, coût

Complications

- Vidal V et al. J Radiol. 2008 Apr;89(4):495-8.
 - N=127 (divers origines, durée moyenne: 14j)
 - Occlusion: 7%
 - Rupture: 1,6%
 - Infection: 3%
 - Thrombose: 2,4%
 - Ablation accidentelle: 2,4%
 - Mais c'est super!

Complications infectieuses

- Taux d'incidence: 0,11 à 6,6 pour 1000 jours cathéter
 - Etudes de qualité différente, populations diverses, définitions...
- 1 seule étude observationnelle suggère une ↓ du risque infectieux avec les Picc lines
- 2 études randomisées
 - Picc vs VVP: pas de différence [Perier D (2008)]
 - Picc vs CVC: pas de différence [Cowl CT (2000)]
- ↑ du risque infectieux: réa et cancer

The Risk of Bloodstream Infection in Adults With Different Intravascular Devices: A Systematic Review of 200 Published Prospective Studies

Maki DG et col. Mayo Clin Proc. 2006

VVP	0,5 1000 jours cathéter
Picc lines (patients hospitalisés)	2,1
CIP	0,1
KT tunnélisés	1,6
Autres CVC	2,7




Randomized controlled trial of peripherally inserted central catheters vs. peripheral catheters for middle duration in-hospital intravenous therapy

D. PERIARD,^{*,1} P. MONNEY,^{†,1} G. WAEBER,[†] C. ZURKINDEN,[†] L. MAZZOLAI,^{*} D. HAYOZ,^{*}
 F. DOENZ,[§] G. ZANETTI,[‡] J.-B. WASSERFALLEN[†] and A. DENYS

Journal of Thrombosis and Haemostasis, 6: 1281–1288

- Adultes nécessitant un kt \geq 5j
- PICC (n= 31) vs CVP (n=29)
- Durée moyenne: 9,4 et 7,3j
- \uparrow risque thrombotique
- Complication nécessitant 1 ttt spécifique, réH ou prolongation d'H: 24% vs 4,7% (p<0.01)

Table 2 Safety outcomes

	PICC (n = 31)	PC (n = 29)	P-value
Incidence of major complications			
All events (deep venous thrombosis, sepsis, cellulitis)	7 (22.6)	1 (3.4)	0.03 
Deep venous thrombosis	6 (19.4)	1 (3.4)	0.06 
Celulitis	1 (3.2)	0	0.51
Sepsis	0	0	
Major complications per 1000 patient-days	24.0	4.7	<0.01 
Incidence of minor complications			
Superficial venous thrombosis	9 (29.0)	13 (44.8)	0.20
Superficial venous thrombosis per 1000 patient-days	30.9	61.4	<0.01

Values given in parentheses are in percentages.

Complications and cost associated with parenteral nutrition delivered to hospitalized patients through either subclavian or peripherally-inserted central catheters

C. T. COWL*, J. V. WEINSTOCK†, A. AL-JURF†, K. EPHGRAVE†, J. A. MURRAY *, K. DILLON† *Clinical Nutrition (2000) 19(4): 237–243*

Factor	PICC (n=51)	Subclavian (n=51)	p-value
Aborted insertion attempt, n (%)	7 (13.7)	3 (5.9)	NS
Completion of therapy without line complication, n (%)			
End of prescribed course	24 (47.1)	35 (68.6)	<0.05
Patient died	1 (2.0)	1 (2.0)	NS
Premature termination of catheter, n (%)			
Clinically-evident thrombophlebitis			
Total	8 (15.4)	1 (2.0)	<0.01
Mild	2 (4.0)	0 (0.0)	NS
Moderate	2 (4.0)	1 (2.0)	NS
Severe	4 (7.8)	0 (0.0)	<0.05
Malposition	5 (9.8)	1 (2.0)	<0.05
Pneumothorax	0 (0.0)	2 (4.0)	NS
Line occlusion	6 (11.7)	2 (4.0)	NS
Requiring catheter removal	1 (2.0)	0 (0.0)	NS
Catheter Infection			
Total	2 (4.0)	3 (5.9)	NS
Local (purulence from site)	1 (2.0)	1 (2.0)	NS
Probable	1 (2.0)	1 (2.0)	NS
Definite	0 (0.0)	1 (2.0)	NS
Falsely suspected line infection	1 (2.0)	6 (11.8)	<0.05
Dislodged catheter	3 (5.9)	0 (0.0)	NS
Catheter failure/leak	2 (4.0)	0 (0.0)	NS

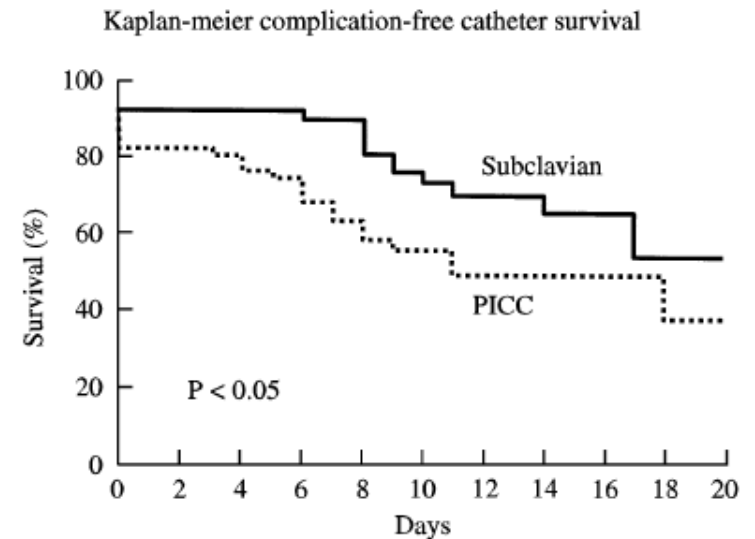


Fig. 1 Kaplan-Meier complication-free survival curves revealed that patients with the peripherally-inserted central catheter encountered complications sooner than the standard subclavian approach.

Risque thrombotique

479 picc lines
Réa neuro

39 (8.1%)
thrombose
veineuse profonde
symptomatique

Tps
médian:
12j

6 EP (1.3%)

- 50% de thrombose asymptomatique
- Risque thrombotique: 2 à 10 fois plus élevé selon les études
- Risque d'occlusion d'au moins une voie: 2x + avec PICC dans une étude en onco-hémato (Worth LJ, 2009)

Triple-Lumen Peripherally Inserted Central Catheter in Patients in the Critical Care Unit: Prospective Evaluation¹

Radiology: Volume 256: Number 1—July 2010

Scott O. Trerotola

Reported Rates of PICC-related Thrombosis and Infection

Series	Year	Critical Care Setting?	Catheter Size (F)	Catheter Material*	Symptomatic Thrombosis Rate [†]	Phlebitis Rate (%)	Asymptomatic Thrombosis Rate (%)
Chemaly et al (32)	2002	No	3–4	S	2.5%	NR	NR
Patel et al (26)	2007	Yes	5	Both	1.0%	NR	NR
Snelling et al (33)	2001	No	4	S	NR/(0.8)	NR	NR
Duerksen et al (34)	1999	No	4–5	S	NR	11.5	NR
Loughran and Borzatta (35)	1994	No	2–4	S	NR	9.7	NR
Kearns et al (21)	1996	No	4–5	Both	13.6% (2.7)	13.6	NR
Loewenthal et al (36)	2002	No	3–4	S	1.9%	5.3	NR
Allen et al (37)	2000	No	3–5	S	NR	NR	23.3
Cardella et al (11)	1996	No	3–5	S	NR	3.8	NR
Fong et al (38)	2001	No	3–5	S	NR	4.7	NR
Hanna et al (39)	2004	No	5	S	11.7%	NR	NR
Grove and Pevec (10)	2000	No	3–6	S	3.9%	NR	NR
Paz-Fumagalli et al (40)	1997	No	5	S	0.0%	0.0	NR
Abi-Nader (41)	1993	Yes	4–5	S	NR	5.2	NR
Ong et al (9)	2006	NR	NR	NR	2.6%	2.2	NR
Walshe et al (42)	2002	No	4–5	S	3.4% (1.14)	6.6	NR
Cowl et al (20)	2000	No	5.5	S	9.8% (10.3)	9.8	NR
Ng et al (43)	1997	Some	3–8	S	3.8%	3.8	NR
Present series	2010	Yes	6	P	20.0%	NR	58.0

Risk of Catheter-Related Bloodstream Infection With Peripherally Inserted Central Venous Catheters Used in Hospitalized Patients*

CHEST / 128 / 2 / AUGUST, 2005

Nasia Safdar, MD, MS; and Dennis G. Maki, MD

Conclusion: This prospective study shows that PICCs used in high-risk hospitalized patients are associated with a rate of catheter-related BSI similar to conventional CVCs placed in the internal jugular or subclavian veins (2 to 5 per 1,000 catheter-days), much higher than with PICCs used exclusively in the outpatient setting (approximately 0.4 per 1,000 catheter-days), and higher than with cuffed and tunneled Hickman-like CVCs (approximately 1 per 1,000 catheter-days). A randomized trial of PICCs and conventional CVCs in hospitalized patients requiring central access is needed. Our data raise the question of whether the growing trend in many hospital hematology and oncology services to switch from use of cuffed and tunneled CVCs to PICCs is justified, particularly since PICCs are more vulnerable to thrombosis and dislodgment, and are less useful for drawing blood specimens. Moreover, PICCs are not advisable in patients with renal failure and impending need for dialysis, in whom preservation of upper-extremity veins is needed for fistula or graft implantation. (CHEST 2005; 128:489–495)

- L'augmentation de l'utilisation des picc lines en hémato et onco est-t-elle justifiée, étant donné le taux de complications?

Pikwer A, Anaesthesia 2012

- *"le risque de mauvaise position du cathéter, de thrombophlébite et de dysfonction du cathéter favorisent l'utilisation des cathéters placés en position centrale plutôt que des PICC, et que les deux types de cathéters ne diffèrent pas en ce qui concerne le risque d'infection du cathéter".*

Coût

PICC LINE	55 €HT
KTVC simple lumière	5.5 €HT
KTVC double lumière	10 €HT
CIP	65 à 85 €HT

Pose:
IDE (USA, Lyon)
Radiologue,
anesthésistes...



Système de fixation
Ex Statlock®, 4€, changement 1x/sem, non remboursé (si pas inclus dans prestation), boîtes de 50

Table 1 Comparison of direct institutional cost estimates for insertion and maintenance of catheters

Catheter type	Total estimated direct cost	No. of days of total catheter use (includes all catheters in category)	Mean cost per day	<i>P</i> -value
All catheters (including complication costs)				
All catheters	US\$19 392.89	1015	US\$9.11 ± 2.85	= 0.03*
PICC	US\$10 756.49	482	US\$22.32 ± 2.74	
Subclavian	US\$ 8 636.40	533	US\$16.20 ± 2.96	

*PICC versus subclavian catheters.

Satisfaction des patients?

- Picc lines > VVP
 - Periard D, 2008; Michaud C, 2011; Schwengel DA, 2004

- CIP > Picc lines
 - Michaud C, 2011
 - Invisibles, pas de freins aux activités quotidiennes
 - Mais pose plus désagréable
 - O'Grady NP, 2002

Conclusion

- C'est plus facile donc on en pose plus
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- Plus de thromboses, d'occlusions
- Ça coûte plus cher (surtout en France)
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