



Una nuova tecnologia per la riduzione delle contaminazioni intraluminali: i port protectors

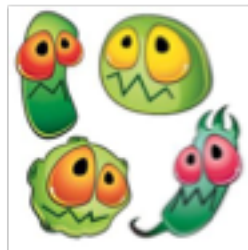
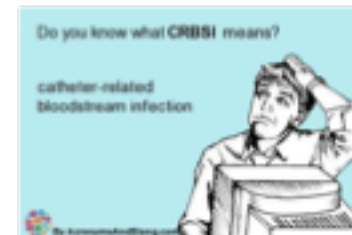
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VIII PICC DAY

Genova 2014
Porto Antico di Genova
Magazzini del Cotone
Venerdì 5 Dicembre

CRBSI... The never ending story...

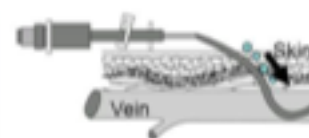
- Aumento degli accessi venosi centrali nella pratica assistenziale
- CRBSI ancora frequenti, nonostante nuove strategie comportamentali e tecnologiche di prevenzione
- Prolungamento della degenza media di 11-23 giorni
- Costo per CRBSI: ca. 13.000 Euro per episodio
- Mortalità attribuibile: 12-25%



Alla base della prevenzione:
CONOSCENZA DELLA PATOGENESI DELLE CRBSI

Microbial Source of Catheter-Related Blood Stream Infections

EXTRALUMINAL



Extraluminal biofilm:

- Major source of CRBSI within first week of catheterization in short-term catheters
- Major source of tunnel infections in long-term catheters

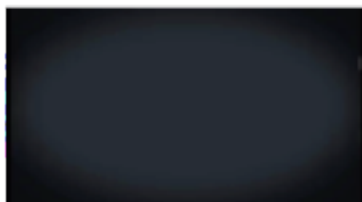
INTRALUMINAL



Intraluminal biofilm:

- Major source of CRBSI after 1 week in both short- and long-term catheters

Nella realtà....



ADERENZA DEGLI OPERATORI SANITARI ALLO SCRUBBING (ESECUZIONE E TECNICA CORRETTA):

<30%



Una delle soluzioni più efficaci che oggi la tecnologia mette a disposizione per aumentare l'aderenza alla disinfezione degli Hub: i Port Protector

- Cappucci contenenti una spugna imbevuta di alcool isopropilico al 70%
- Vengono applicati sui NPC alla fine di una infusione e dopo il flush del catetere
- Sono in grado di disinfettare passivamente (senza scrubbing) il NPC in 3-4 minuti e, se non rimossi, fino a 7 giorni
- Aumentano in maniera assolutamente significativa l'aderenza degli operatori sanitari alla disinfezione dell'Hub
- Sono supportati da numerosi lavori
- Sono raccomandati dalle linee guida SHEA/IDSA 2014



Background: A major risk factor for the development of bloodstream infection is the presence of a central venous catheter (CVC), especially in immunocompromised patients. CVC hub contamination is a risk factor for central line-associated bloodstream infection (CLABSI).

Methods: This observational before–after trial in a tertiary care hospital's oncology unit included adult patients with a CVC. During the intervention period, the practice of central line hub care was changed from cleaning with alcohol wipes to using alcohol-impregnated port protectors. To accommodate the protectors, the needleless hubs were changed to a neutral pressure connector. The intervention period (January–July 2010) was compared with a historical control (January–December 2009).

Results: A total of 1,000 central line-days and 1 CLABSI (a rate of 0.1 infections/1,000 central line-days) were documented during the intervention period, compared with 6,831 central line-days and 36 CLABIs (2.3 infections/1,000 central line-days) during the control period (relative risk, 0.04, 95% confidence interval [CI] 0.00–0.97; $P = .03$). The rate of contaminated blood cultures (CBCs) from central lines was 2.3% (17 of 682) during the control period, but only 0.2% (1 of 470) during the intervention period (relative risk, 0.09, 95% CI, 0.01–0.83; $P = .003$).

Conclusions: The implementation of alcohol-impregnated port protectors and needleless neutral pressure connectors significantly reduced the rates of CLABIs and CBCs in our oncology patient population.

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Major article

Continuous passive disinfection of catheter hubs prevents contamination and bloodstream infection

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Table 1

Implementation dates, number of enrolled surgical patients, number of central lines, positive cultures/line-days, and negative density for hospitals A, C, and control overall

	Hospital A	Hospital C	Hospital D	Control overall
Number of patients				
Pre	6,200 (1,000)	7,000 (1,000)	7,000 (1,000)	
Int	6,200 (1,000)	7,000 (1,000)	7,000 (1,000)	
Post	6,200 (1,000)	7,000 (1,000)	7,000 (1,000)	
Number sampled and percent with contamination				
Pre	1,000 (1.6%)	1,000 (1.7%)	1,000 (1.6%)	1,000 (1.6%)
Int	1,000 (1.6%)	1,000 (1.7%)	1,000 (1.6%)	1,000 (1.6%)
Post	1,000 (1.6%)	1,000 (1.7%)	1,000 (1.6%)	1,000 (1.6%)
Number sampled and percent with contamination				
Pre	1,000 (1.6%)	1,000 (1.7%)	1,000 (1.6%)	1,000 (1.6%)
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Post	1,000 (1.6%)	1,000 (1.7%)	1,000 (1.6%)	1,000 (1.6%)

Pre = pre-intervention; Int = intervention; Post = post-intervention.

* $P < .05$.

^a $P < .05$.

^b $P < .05$.

Port protectors and educational intervention: the way to zero central line-associated bloodstream infections (CLABIs). A randomized controlled trial.

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STUDY DESIGN

The **interventional phase** involves two types of intervention:

1. Educational meeting directed to physician medical and nursing staff aimed to describe the recommendations included in the bundle.
2. The use of port-protector Curods (Curods, 70% isopropyl alcohol-impregnated, Ivera Medical, San Diego, California, U.S.) in the management of CVCs, according to the random effects model "open label".

Patients hospitalized with CVCs (according to inclusion criteria) during the prospective phase have been randomized into two groups:

- a) one managed by medical staff after the educational meetings.
- b) the other managed by medical staff, after the educational meetings, using the port protector.

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RESULTS

Treatment Group	CLABSI/1000
Preintervention	8.6
Intervention	2.6
Intervention+CUROS	0

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INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY 2014, 38(1), 1-7

ORIGINAL PRACTICE RECOMMENDATION

Strategies to Prevent Central Line-Associated Bloodstream Infections in Acute Care Hospitals: 2014 Update

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Lisa L. Mangot, MD, MPH¹², Deborah S. Tolan, MD, MPH¹³

3. Use an antiseptic-containing hub/connector cap/port protector to cover connectors (quality of evidence: D).¹⁴⁻¹⁶

Conclusioni

- * Attualmente la via di contaminazione più frequente ed efficace di un catetere venoso è quella intraluminal
- * Tale via di contaminazione si realizza perlopiù attraverso una mancata disinfezione o una disinfezione scorretta dello Hub
- * Una concreta possibilità per prevenire la contaminazione intraluminal è rappresentata dalla disinfezione passiva attraverso i Port Protectors

Quindi...



Grazie per l'attenzione!

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