



NEONATOLOGY
Vascular access

expert umbilical catheter

The only antimicrobial
umbilical catheter

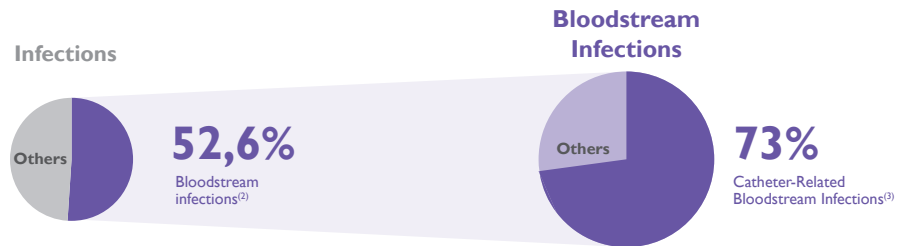


Value Life

Catheter-Related Bloodstream Infections (CRBSI), a global challenge

• Incidence

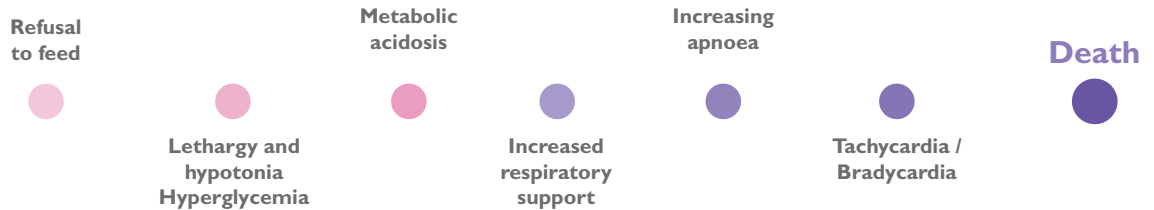
“ More than one million neonatal deaths every year in the world are attributable to infection. In Neonatal Intensive Care Units (NICUs) the reported [infection] incidence is 7-24.5%, and up to 40% in newborns with birth weight less than 1000 g or gestational age at birth <28 weeks⁽¹⁾. ”



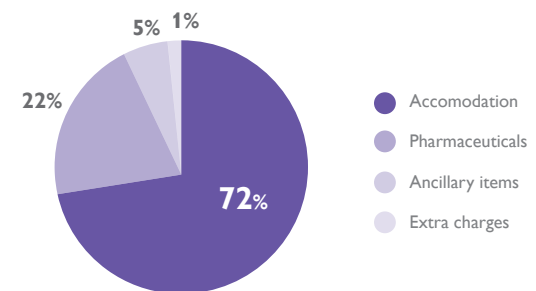
The incidence per 1000 device days is around 10.5 for umbilical catheter associated BSI⁽⁴⁾

Risk factors ⁽⁵⁾		
Low birth weight	TPN	Dwell time

• Consequences^(3, 6, 7, 8)



The mean additional length of hospital stay in neonates with HAI is **24 days**.
The mean extra charges for patients with a HAI is **11 750 €**⁽⁹⁾.



Recommendations⁽¹⁰⁾

“ II. Special approaches for preventing CLABSI [...] 4. Use silver zeolite - impregnated umbilical catheters in preterm infants (in countries where it is approved for use in children) ” **Society for Healthcare Epidemiology of America - 2014**

expert umbilical catheter

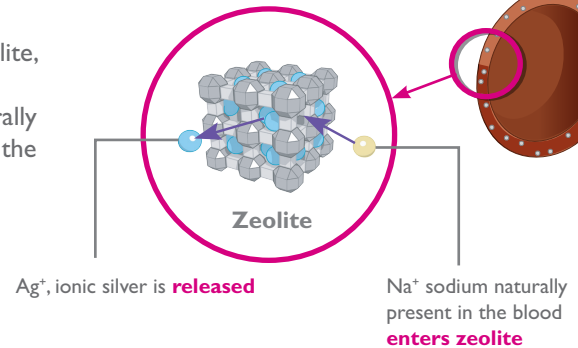
The **expert** umbilical catheter is the only umbilical catheter with an integrated antimicrobial technology, the AgION™ technology, to fight against CRBSI in NICUs.

The AgION™ technology is made of ionic silver bound into zeolite, a bio-inert ceramic integrated in the catheter material⁽¹¹⁾. When the catheter comes in contact with blood the zeolite naturally releases the Ag⁺ ions and replace them by Na⁺ ions present in the blood. It is a pure ionic exchange.

Ionic silver is a highly efficient antimicrobial technology with⁽¹¹⁾:

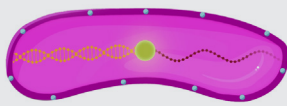
- a broad spectrum of action on gram⁺, gram⁻ and fungi
- a low toxicity
- a tri-modal action

The AgION™ technology

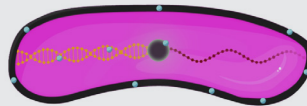


Tri-modal efficacy

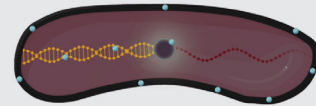
Ionic silver is a **bacteriostatic that inhibits the cell reproduction in three steps.**



1. Damages of cell wall, Cessation of breathing



2. Inhibition of cell division



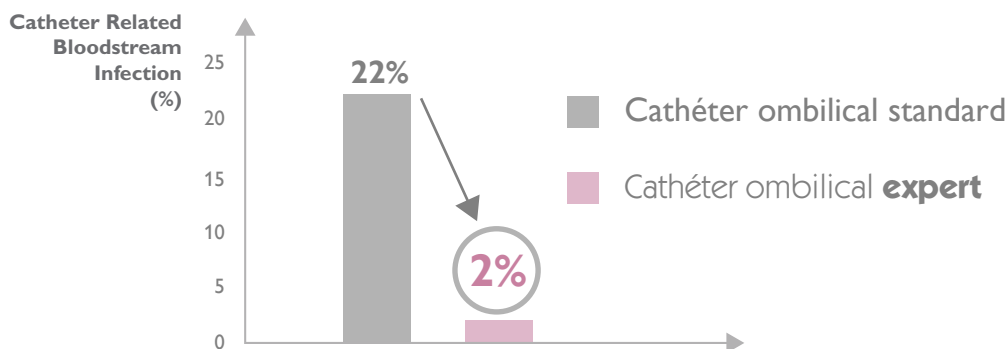
3. Disruption of cell metabolism

Clinical study⁽¹²⁾

Objective & Settings

To determine the efficacy of the AgION™ antimicrobial system in reducing catheter-related bloodstream infections in preterm infants. A three year, single-site, randomised study at the Careggi University Hospital of Florence. 86 preterm infants: 45 with umbilical expert and 41 with a standard umbilical catheter.

Results

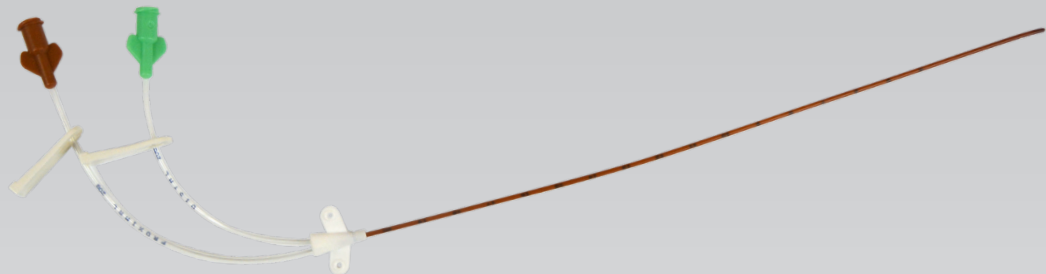


“ Preterms with expert UVC had shorter hospital stay and lower case fatality rate. ”

Technical features

Single-lumen	Code	Fr	Length cm	Ext. Ø mm	Int. Ø mm	Flow rate ml/min	Prim. vol. ml
	8270.230	2.5	30	0.8	0.5	2.2	0.1
	8270.340	3.5	40	1.2	0.8	12	0.3
	8270.440	4	40	1.5	0.8	12	0.3
	8270.540	5	40	1.7	1.0	27	0.4
8270.840	8	40	40	2.5	1.5	109	0.8

Double-lumen	Code	Fr	Length cm	Ext. Ø mm	Int. Ø mm	Flow rate ml/min	Prim. vol. ml
	8272.420	4	20	1.5	0.5	13.8 (x2)	0.3 (x2)
	8272.440	4	40	1.5	0.5	8.1 (x2)	0.4 (x2)
8272.540	5	40	40	1.7	0.7	6.4 (x2)	0.3 (x2)



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