

NEONATOLOGY

VASCULAR ACCESS

expert umbilical catheter

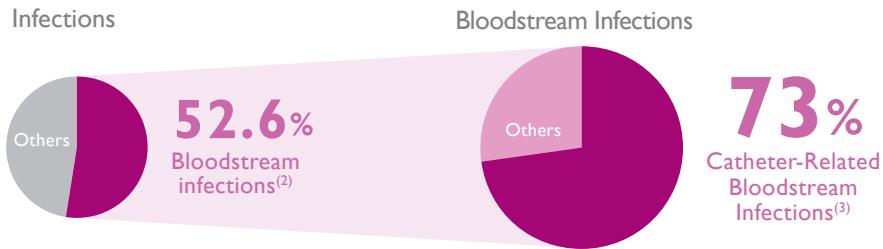
The only antimicrobial
umbilical catheter



Value Life

CATHETER-RELATED BLOODSTREAM INFECTIONS (CRBSI), A GLOBAL CHALLENGE

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 10.5 for umbilical catheter-associated BSI⁽⁴⁾

Risk factors for BSI



Low birth weight

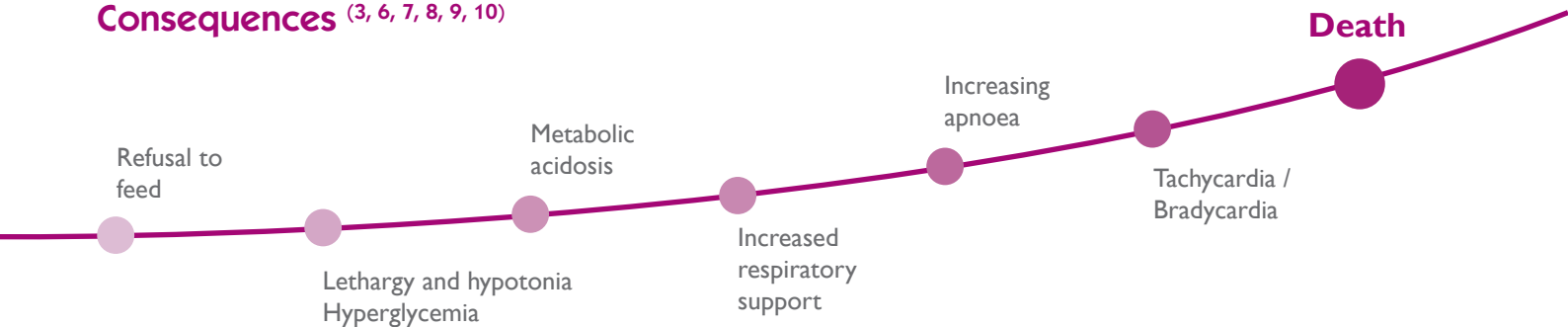


Total Parenteral Nutrition



Dwell time

Consequences ^(3, 6, 7, 8, 9, 10)



The mean additional length of hospital stay in neonates with Healthcare Associated Infection (HAI) is 24 days⁽⁹⁾.

The mean extra charges for patients with a HAI is 16,880 USD⁽¹⁰⁾.

Recommendations ⁽¹¹⁾

Impact of silver zeolite-impregnated umbilical catheters in preterm infants [...] antimicrobial-impregnated umbilical catheters appear to be safe and effective in NICU patients.

Society for Healthcare Epidemiology of America - 2022

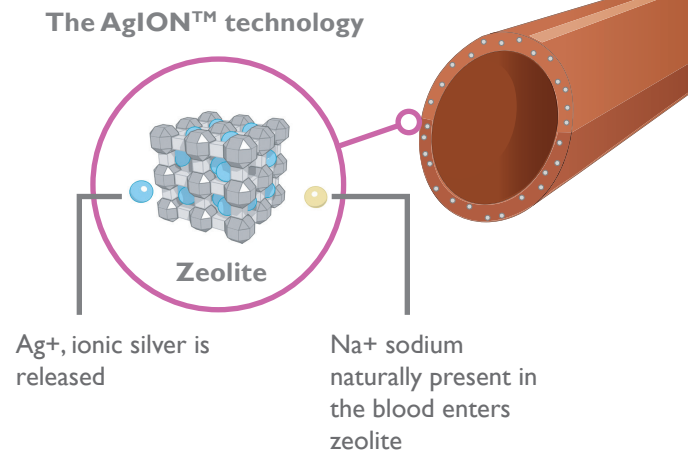
VYGON'S SOLUTION

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⁽¹²⁾. 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.

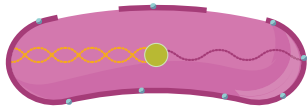
Ionic silver is a highly efficient antimicrobial technology with⁽¹²⁾:

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

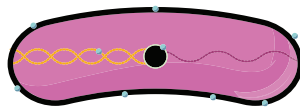


Tri-modal efficacy

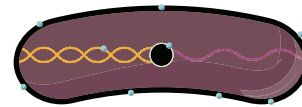
Ionic silver is a bacteriostatic that inhibits the cell reproduction in three steps.



1. Damages of cell wall, Cessation of breathing



2. Inhibition of cell division



3. Disruption of cell metabolism

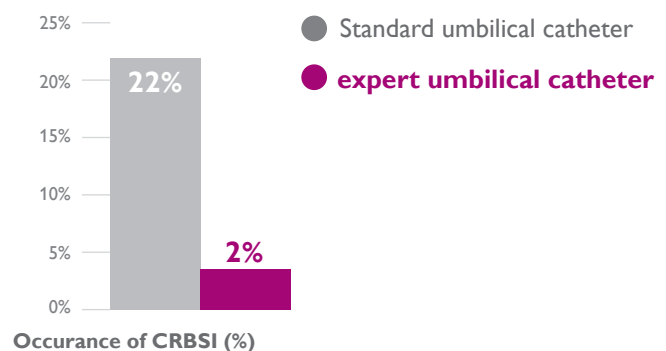
CLINICAL STUDY ⁽¹³⁾

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 umbilical catheter had shorter hospital stay and lower case fatality rate.

TECHNICAL FEATURES

Single-lumen	Code	NHSSC Code	Fr	Length cm	Ext. Ø mm	Int. Ø mm	Flow rate ml/min	Prim. vol. ml
	008270230	FVP85000	2.5	30	0.8	0.5	2.2	0.1
	008270340	FVP85001	3.5	40	1.2	0.8	12	0.3
	008270440	FVP85003	4	40	1.5	0.8	12	0.3
	008270540	FVP85004	5	40	1.7	1.0	27	0.4
	008270840	-	8	40	2.5	1.5	109	0.8

Double-lumen	Code	NHSSC Code	Fr	Length cm	Ext. Ø mm	Int. Ø mm	Flow rate ml/min	Prim. vol. ml
	008272420	FVP85005	4	20	1.5	0.5	13.8 (x2)	0.3 (x2)
	008272440	-	4	40	1.5	0.5	8.1 (x2)	0.4 (x2)
	008272540	-	5	40	1.7	0.7	6.4 (x2)	0.3 (x2)

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