

# ARROWgard Blue PLUS® Antimicrobial Central Venous Catheter (CVC) Study Shows Reduced Infections and Related Cost

Peer-Reviewed Published Study Shows Advantages of  
Chlorhexidine/Silver Sulfadiazine-Impregnated CVC vs. Uncoated CVC

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Newly published research has reaffirmed that the ARROW Central Venous Catheter (CVC) with ARROWgard Blue PLUS® Technology reduces the incidence of catheter-related bloodstream infections (CRBSIs) and reduces direct costs related to treatment of these potentially deadly infections.<sup>1</sup>

The prospective study, by Leonardo Lorente M.D., Ph.D. and colleagues, independent from Teleflex, compared an unprotected CVC to an antimicrobial protected CVC with ARROWgard Blue PLUS® technology, a combination of chlorhexidine and silver-sulfadiazine. ARROWgard Blue PLUS® technology protects the catheter surfaces both intra- and extraluminally. Authors tested the CVCs to determine which was more cost effective, including the cost of treating any associated infections.

The authors undertook the study because previous cost-effectiveness analyses of antimicrobial catheters included the cost of extended hospital stays. This cost varies widely from institution to institution, limiting the transferability of the results from institution to institution.

For this new study, the authors included only the costs of CVCs, infection diagnosis, and antimicrobials used to treat patients who suffered infections. These direct expenses gave a clearer picture of the ultimate cost-effectiveness of protected catheters, given those catheters' somewhat higher initial cost.

"Our research shows that this antimicrobial catheter is cost-beneficial in jugular venous access. We believe that this catheter could be cost-beneficial especially when used at insertion sites that are associated with higher infection rates, such as jugular vein with tracheostomy or femoral vein, or with patients who have a higher risk of infection, such as immunocompromised patients," said Dr. Lorente.

The study involved patients admitted to the ICU of the Hospital Universitario de Canarias in Tenerife, Spain, who received one or more internal jugular venous catheters. It examined a total of 636 catheters and 3,271 catheter days. Each patient's physician made the decision about whether to use a protected or an unprotected catheter.

During the study, the ARROWgard Blue PLUS® CVC achieved zero infections. In contrast to the zero infections associated with ARROWgard Blue PLUS® CVCs, the unprotected catheters were associated with infections in 2% of cases and a CRBSI rate of 5.04/1,000 catheter days. The antimicrobial catheter was also associated with more prolonged CRBSI-free time than the unprotected catheter.

The cost per catheter day of the protected catheter was roughly half that of the unprotected catheter (€3.78 ± €4.45 vs. €7.28 ± €16.71). The differences in CRBSI rate, cost, and catheter-free time, as reported in this study, are statistically significant.

As the authors pointed out, numerous government agencies and professional societies have recommended protected catheters in their guidelines for the prevention of CRBSIs. Among these organizations are the Centers for Disease Control (CDC), the Infusion Nurses Society (INS), the Infectious Diseases Society of America (IDSA), the Society for Healthcare Epidemiology of America (SHEA) and the English epic<sup>2</sup> guidelines.

The ARROWgard technology includes the ARROWgard Blue® and ARROWgard Blue PLUS® products. More than 30 studies support the ability of ARROWgard technology to save lives and reduce costs by reducing infections.

Additional information may be found at [www.arrowgard.com](http://www.arrowgard.com).



#### References:

1. Lorente L, Lecuona M, Jiménez A, et al. Chlorhexidine-silver sulfadiazine-impregnated venous catheters save costs. *American Journal of Infection Control*, 2014; 42: 321-324.
2. epic2: National Evidence-Based Guidelines for Preventing Healthcare-Associated Infections in NHS Hospitals in England. *Journal of Hospital Infection*, 2007, 65S, S1-S64.