



Teleflex Highlights ARROWg+ard Blue PLUS® Antimicrobial Central Venous Catheter (CVC) Study, Which Shows Reduced Infections and Related Costs

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

WAYNE, Pa.--(BUSINESS WIRE)--Mar. 25, 2014-- Teleflex Incorporated (NYSE: TFX), a leading global provider of medical devices for critical care and surgery, has announced that newly published research has reaffirmed that the ARROW Central Venous Catheter (CVC) with ARROWg+ard Blue PLUS® Technology reduces the incidence of catheter-related bloodstream infections (CRBSIs) and reduces direct costs related to treatment of these potentially deadly infections.¹

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 [ARROWg+ard Blue PLUS®](#) Technology. ARROWg+ard Blue PLUS® Technology protects the catheter surfaces both intra- and extraluminally with chlorhexidine/silver sulfadiazine. Authors tested the CVCs to determine which was more cost effective, including the cost of treating any associated infections.

The peer-reviewed paper appears as a featured article in the March 2014 issue of the [American Journal of Infection Control](#), which is published by [APIC](#), the Association for Professionals in Infection Control and Epidemiology. Dr. Lorente works in the Department of Critical Care at Hospital Universitario de Canarias, in Tenerife, Spain.

The Lorente paper said 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, they said.

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, they believed, 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 unprotected catheter.

During the study, the ARROWg+ard Blue PLUS® CVC achieved zero infections. In contrast to the zero infections associated with ARROWg+ard 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. The cost was calculated in euros because the study was done in Spain. As of the press release, the conversions to dollars would be (\$5.22 ± \$6.14 vs. \$10.05 ± \$23.06).

"The statistically significant finding that the ARROWg+ard Blue PLUS® CVC was the most cost-effective option is very important," said Jay White, President Vascular Access Division. "It shows the value of looking not just at the initial cost of an infection prevention device, but also considering its ability to improve patient care and save hospitals money."

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 CDC, Infusion Nurses Society (INS), Infectious Diseases Society of America (IDSA) and Society for Healthcare Epidemiology of America (SHEA).

"This impressive study demonstrates both the clinical efficacy and cost-effectiveness of chlorhexidine/silver sulfadiazine catheters," said Keith Kaye, M.D., a US based infection prevention expert who was not involved in the study. "The science behind the antimicrobial coating and protection of internal and external surfaces is well established, and this study adds to the large body of clinical evidence showing the effectiveness of the device. There is a reason it is the most widely used catheter of its type."

"This study defined cost-effectiveness in very direct terms, but hospitals should also consider the broader financial implications of reducing CRBSIs," said Kaye. "Patients are learning how to find the safest hospitals, and they now have multiple places to look, from hospital quality ratings by the Leapfrog Group and the Joint Commission, to statistical leaders in states that require hospitals to report healthcare-acquired infections. CRBSIs are weighted very heavily in all of these rankings."

Dr. Kaye is a professor of medicine at Wayne State University in Detroit, Mich., and corporate director of Infection Prevention, Hospital Epidemiology and Antimicrobial Stewardship at the Detroit Medical Center. Dr. Kaye is a paid consultant of Teleflex.

More than 30 studies support the ability of ARROWg+ard Technology to save lives and reduce costs by reducing infections. Additional information may be found at www.arrowgard.com.

About Teleflex Incorporated

Teleflex is a leading global provider of specialty medical devices for a range of procedures in critical care and surgery. Our mission is to provide solutions that enable healthcare providers to improve outcomes and enhance patient and provider safety. Headquartered in Wayne, PA, Teleflex employs approximately 11,400 people worldwide and serves healthcare providers in more than 150 countries. Additional information about Teleflex can be obtained from the company's website at teleflex.com.

Forward-Looking Statements

Any statements contained in this press release that do not describe historical facts may constitute forward-looking statements. Any forward-looking statements contained herein are based on our management's current beliefs and expectations, but are subject to a number of risks, uncertainties and changes in circumstances, which may cause actual results or company actions to differ materially from what is expressed or implied by these statements. These risks and uncertainties are identified and described in more detail in our filings with the Securities and Exchange Commission, including our Annual Report on Form 10-K.

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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.

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