

Antimicrobial Coating For Implanted Medical Devices Reduces Risk Of Post-Op Infections

Columbia University



Infections are a growing problem in health care settings. According to the Centers for Disease Control, there are 4.5 hospital infections for every 100 patient admissions, and nearly 100,000 deaths annually from hospital infections.

To fight this problem, department of surgery researchers at Columbia University in New York, N.Y. have developed an antimicrobial coating for implanted medical devices that reduces the risk of post-operative infection. From 1984 to 1987 Shanta Modak, M.D., Charles Fox, M.D., and Lester Sampath, M.D. developed the method and technology for applying an antimicrobial coating to medical devices and surfaces, making them infection-resistant.

The coating consists of a polymeric matrix containing antimicrobial silver sulfadiazine and chlorhexidine. Initially funded with \$500,000 from Daltex Medical Sciences, early experiments involved coating urinary catheters, gauze dressings, soft tissue patches, arterial grafts, catheters, wound covers, gloves, mask, contraceptive devices and implantable pumps.

“ Studies have shown a 50-80 percent reduction in catheter-related infection and a 60 percent reduction in bloodstream infection when this antimicrobial coating is used.

Columbia University licensed this technology to Daltex Medical Sciences in 1987, which later sublicensed it to Arrow International. Arrow International has sold more than five million central venous catheters that utilize this technology.

W.L. Gore also incorporates this coating in manufacturing the only hernia repair material that inhibits bacterial colonization in the hernia repair patch for up to two weeks after its implantation. Current research also indicates a lower risk of microorganisms developing resistance to antimicrobialcoated surfaces compared to non-coated implanted medical devices, making them a better long-term solution for patients.

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