Should Hospitals Use Cranberries to Prevent & Treat CAUTIs?

Imagine that a patient comes into your hospital for a routine procedure, but ends up fighting a serious urinary tract infection (UTI) while on your watch. According to the Centers for Disease Control, UTIs are the most common type of hospital-associated infection (HAI), and of those infections, urinary catheters are associated with 75% of them.

Each time a patient gets an HAI, it can cost up to $10,000. What’s worse? The infection is preventable. Despite efforts, catheter-associated urinary tract infections (CAUTI) are pervasive and hard to treat, but recent research suggests a sometimes overlooked treatment may help: cranberries.

What Causes CAUTIs?

When a patient is unable to urinate on their own and a urinary catheter is inserted, the catheter quickly becomes colonized with sticky microorganisms that can enter the urinary tract, causing infection. The longer a patient has a catheter, the more likely they are to develop an infection. Research from the National Institutes of Health (NIH) suggests that when patients are catheterized for over a week, between 10% and 50% will develop a CAUTI.

How Can Cranberries Help?

A recent study from researchers in Canada concludes that hospitals can use cranberries to prevent UTIs. Scientists believe the active components in cranberries prevent bacteria from collecting on the bladder wall, preventing infection.

This study, the first of its kind to review the use of cranberries for CAUTIs, found that participants in an outpatient facility who took oral cranberry supplements for 6 months had fewer symptoms. Resistance to antibiotics was reduced by 28%, with a nearly 59% reduction in organisms that could cause infection.

Although the study did not take place in a hospital, another NIH study simulating results of using cranberries in a hospital found that Hospital-Acquired Condition (HAC) scores improved with this approach. This study used public data from the Centers for Medicare and Medicaid Services (CMS) and looked at how scores would improve given the effective rates of using cranberries for CAUTI. Nearly all simulated hospitals improved their overall score by using cranberries as treatment.

A study by the American Chemical Society and American Society of Pharmacognosy reinforces the Canadian study’s findings looked at adult female sows fed spray-dried cranberry powder. The study found less adhesive properties in the sows’ urine.
Cranberries and the History of Treating UTIs

The cranberry is a fruit with a long history of healing properties. Pilgrims and early settlers ate cranberries to fight off scurvy, while Native Americans ground up cranberries to use it as a paste to heal infected wounds. Cranberries have been used to ease blood disorders, liver and stomach ailments, and fevers. The most widespread medicinal use of cranberries in the West is for urinary tract infections.

Since the early 1900s, researchers have tried to prove the healing properties of cranberries, and while, anecdotally, that remains the case, scientists are still working to prove definitively that cranberries can protect against or cure urinary tract infections. Although the literature is mixed, studies continue to show that cranberries have healing properties that should be considered as part of treatment.

Preventing CAUTIs Is the Goal

Preventing and treating CAUTIs requires more than one solution. It requires a multi-faceted approach that includes:

• Increasing education about CAUTIs: making sure healthcare professionals are educated in catheter placement, usage, and maintenance

• Identifying patients who are at higher risk and need more intense monitoring: risk factors include being female, having diabetes, being older or being a pediatric patient, and having certain comorbidities, especially stroke and paraplegia

• Using indwelling catheters less frequently when possible: these types of catheters carry a higher risk of CAUTI, especially the longer they are inserted; using catheters for the shortest duration feasible also decreases CAUTI risk

• Using antibiotics judiciously to prevent resistance: Antibiotics are routinely used to treat CAUTIs, but these are not necessarily effective, particularly among older patients — and as infections become resistant to antibiotics, they become challenging to treat

• Implementing multiple approaches, such as cranberries: Adding the use of cranberries to medical treatments increases the ability to treat this common, yet potentially deadly, infection

Hospitals in the US have an additional incentive to reduce CAUTIs. The Affordable Care Act’s Hospital-Acquired Condition (HAC) Reduction program ranks hospitals based on their hospital-acquired conditions.

Hospitals that score in the lowest quartile are subject to a 1% reduction in total Medicare reimbursements. In 2017, 769 hospitals incurred a total of $430 million in payment reductions.
Current CAUTI Treatments Aren’t Enough: Hospitals Should Try Cranberries

Hospitals typically have a standard course of action when it comes to treating CAUTIs, however, these actions don’t always work. Especially for fragile patients, an infection can be a life-altering complication. When hospitals are faced with this type of challenge, it is their obligation to change what their best practices are, based on what is most critical for the patient, even if it means trying something new.

Currently, the primary practices for treating CAUTIs are:

Determine If Removing the Catheter Is Feasible

Rather than inserting and keeping a catheter in as standard practice, consider if it is necessary. Removing the catheter as soon as possible decreases the risk of a CAUTI, but for some patients who may be unconscious or immobile, this is not an option. However, if a patient is conscious and ambulatory, encourage them to try walking to the restroom. If you have patient care technicians, have them work with patients to get to the restroom, taking those first steps after surgery or delivery.

Administer Antibiotics

Antibiotics are routinely used to address CAUTIs, but as E. coli, the bacteria responsible for causing most urinary tract infections, becomes more resistant to those medications, the illnesses become more difficult to treat. While medical professionals may consider using alternative antibiotics, it is challenging to develop drugs that stay a step ahead of resistant bacteria.

Use Catheters with Antimicrobial Coatings

Because urinary tract infections can develop when bacteria attaches to the catheter surface and then travels to the bladder, researchers hope that a catheter coated with an antimicrobial substance eliminates that path.

These catheters show some promising results, with mice impregnated with antimicrobial implants having lower levels of inflammation than those with uncoated implants. However, it is too soon to determine antimicrobial implants or catheters work across the board. Other research found that antimicrobial catheters decreased the risk of CAUTI in diabetic patients with insulin.

More investigation needs to be done, but antimicrobial catheters present another possibility well worth exploring in the quest to treat and prevent CAUTIs.

CAUTIs present a continued concern for hospitals. Considering a variety of treatments, both old and new, may be the key to preventing this serious infection.