The Role of Hypochlorous Acid in Managing Wounds: Reduction in Antibiotic Usage

Numerous brands of hypochlorous acid have emerged in the last few years and have been marketed as "ideal" products for use in wound cleansing. These statements, of course, should draw speculation because it is rare for a single product to be used on all wounds, all clients, in all care settings, all the time, thus making it "ideal." Let's explore the role of hypochlorous acid [14] in wound management and wound healing and see how it assists with reduction in antibiotic usage.

In its true native natural state, hypochlorous acid is a biocide produced naturally by the human body through the process of phagocytosis during the oxidative burst pathway. Because hypochlorous acid is an oxidant, it leaves nothing behind for bacteria and viruses to create resistance to and therefore does not contribute to the superbug (multidrug-resistant organisms[15]) dilemma. Manufacturers have found a way to create hypochlorous acid outside the human body and bottle it for commercial use. These products are non-cytotoxic when concentrations (parts per million) and pH levels are acceptable for human use.

Why All The Fuss? The Problem of Multidrug Resistance

With the ever-increasing problem of multidrug-resistant organisms, the Centers for Medicare & Medicaid Services have taken notice in hospitals and nursing homes.[1,2] Aside from this, more medications (especially antibiotics) create more problems. Often the side effects of antibiotic usage are difficult to manage or require more antibiotic usage, such as in cases of *Clostridium difficile* infection. If we are to reduce antibiotic usage we need to know what tools in our tool kit are safe and effective for all age ranges and situations. Hypochlorous acid meets these criteria. In a published scientific article describing a study in which hypochlorous acid was tested to look at a variety of its components, the outcome determined that this solution in most cases had a 12-second kill time for numerous bacteria and viruses, helped promote wound healing and cell proliferation, and did not harm current healthy cells. Also of note, this solution disrupted biofilm and increased cell migration.[3] What's not to like?

What's the Down Side of Hypochlorous Acid?

Hypochlorous acid is more expensive than saline. Based on the product, some preparations have a rather short shelf life after opening (i.e., 24 hours to 30 days), so research the product before purchase to ensure that it meets your expectations and needs. Some preparations have a shelf life of 18 months after opening. Hypochlorous acid cannot be combined with silver products because the two cancel each other out through the power of oxidization. If you add up the cost associated with antibiotics, the costs of treating the side effects of antibiotics, and the cost of silver products, in general, there are significant cost savings associated with the use of hypochlorous acid (depending on the price of the hypochlorous acid preparation you use, of course). If you do a quick review, we are meeting CMS mandates, reducing antibiotic usage, reducing silver usage, not contributing to the multidrug-resistant organism dilemma, disrupting biofilm, and using a non-cytotoxic agent. I guess it really may be considered an ideal agent for wounds after all.

References

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