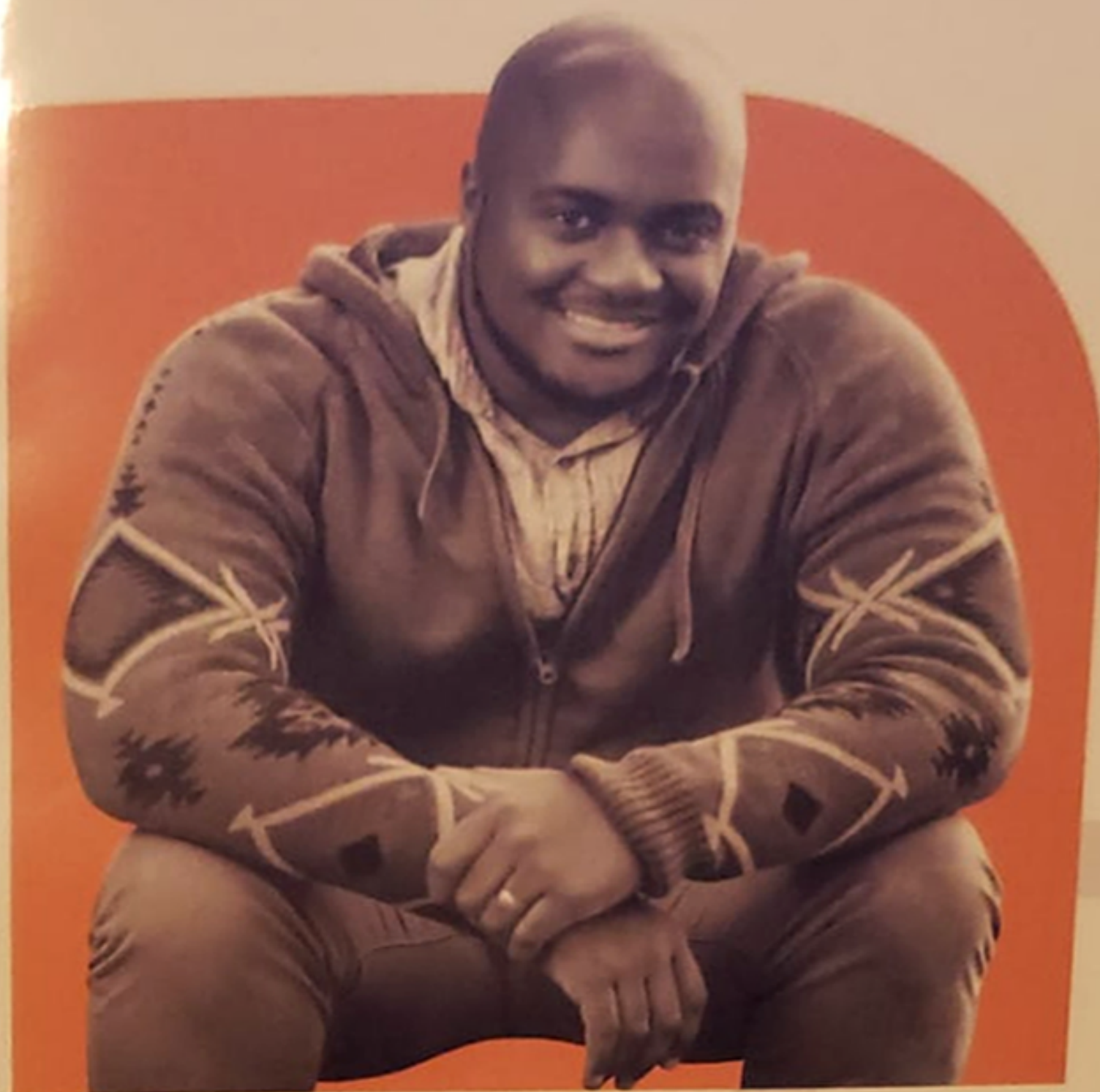


THE SYMPOSIUM ON ADVANCED WOUND CARE



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PI-026. Antimicrobials for Wound Healing - A Critical Review

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Introduction: Recent studies^{1,2,3} reveal the benefits of certain skin microbes (commensals) in enhancing the process of wound healing. In view of these findings, the incorporation of antimicrobials or antibiotics in any wound matrix used as a skin substitute would have a negative impact on the possible beneficial effects of such microbes present in the skin. Our review here reveals the possible disadvantages of using antimicrobials in wound matrices.

Method: In this paper, our focus is in the area of usage of antimicrobial pre-incorporated matrices for wound healing. Sufficient review of literature has been carried out to justify, investigate and analyze published articles. The outcome of this review would help bring about significant changes in the current wound care practice.

Discussion and Conclusion: From our analyses, we acknowledge the possible existence of both beneficial and/or pathogenic microorganisms in the wound bed. Majority of the antimicrobial incorporated matrices contain active ingredients⁴ like silver ions, doxycycline, ciprofloxacin, levofloxacin, tetracycline, iodine, Polyhexamethylene biguanide (PHMB), etc. If PHMB-like broad-spectrum antimicrobial is used on both infected and/or uninfected wounds, it could bring deleterious effects due to:

1. depletion of naturally available beneficial microbes would impede wound healing
2. non-pathogen specific antimicrobial usage is not a proper method to control infection

The prophylactic usage of an antimicrobial may prolong the normal wound healing process. Moreover, antimicrobials like PHMB are suspected to be carcinogenic^{5,6} or genotoxic. Frequent usage of PHMB could cause skin allergy, serious eye injury, and respiratory damage⁷. In conclusion, for an ideal skin substitute, the usage of a good bioactive and non-immunogenic matrix is important than incorporating an antimicrobial. As needed basis, pathogen-specific drugs should be added following the identification of the microbe.