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Letter to the Editor

Our clinical evidence on infected burn wound healing with the bacteriophages-future revolution on the horizon

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ABSTRACT

Done a lot of cases successfully in our place with bacteriophages in small nonhealing chronic wounds but its use in extensive infected burn wound healing is also encouraging. Our clinical evidence of topical application of bacteriophages on extensive multi-drug resistant [MDR] bacterial infected burn wounds has been done for the first time and has never been reported in the literature. The medical revolution is on the horizon for treating superbugs and their positive effect on the economy especially in treating skin wounds.

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Respected Sir,

Done a lot of cases successfully in our place with bacteriophages in small nonhealing chronic wounds but its use in extensive infected burn wound healing is also encouraging. In fact, our clinical evidence of topical application of bacteriophages on extensive multi-drug resistant [MDR] bacterial infected burn wounds has been done for the first time and has never been reported in the literature.

Isolation of bacteriophages is obtained from about 100 ml of water specimens from river Ganga, hospital sewage and ponds in the lab. The purified phages at a concentration of 10 to power 9 CFU/ml of bacteriophages which are suspended in normal saline and is used in topical wound infection.

The use of antiseptics like betadine, spirit, chlorhexidine, etc. is forbidden as it is detrimental to bacteriophages. After washing with normal saline, sterilized gauze pieces soaked with bacteriophages was applied on the wound surface topically. According to culture customized bacteriophages were prepared and some times cocktail of bacteriophages

were used. Bacteriophages were supplied in sterilized falcon tubes and stored in freezer for long time without losing potency. The topical application of a maximum of a 50 ml of 1x10 to power 5 CFU/ml of bacteriophages were used on resistant infected wounds on alternate days. We used customized bacteriophages prepared and filtered in the department of microbiology for culture resistant bacteria.¹ No debridement or slough removal was done and slowly with time, necrotic slough disappeared with healing power of bacteriophages. During application, there was no evidence of a sudden rise in leucocytosis, fever or other adverse side effects. After every two weeks, blood levels of bacteriophages were determined, and a concentration of 1 × 10⁵ CFU/mL was found.

All wounds irrespective of size healed [Figure 1]. The absence of significant scarring and formation of contracture without plastic surgical skin grafting may be attributed to anti-inflammatory and immunomodulatory properties of bacteriophages in spite of long duration of 4 to 5 months of conservative topical treatment.²

The advantages of bacteriophages over antibiotics is quick, simple and inexpensive isolation. Bacteria becoming resistant to it is ten times less than to antibiotics. It is specific

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Fig. 1: Bacteriophage healed the MDR infected burn wound in 5 months

to pathogens, and resistance usually develops after 3 weeks, but there are at least more than 600 bacteriophages for one bacteria. They don't affect human cells and so safe.^{3,4}

Bacteriophages is going to bring Medical revolution for treating superbugs and will have positive effect on economy creating huge global social impact.⁵

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Conflict of Interest

None.

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