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Have Silver Nanoparticles Treat Skin Burns?

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Editorial

Burns were one of the most common and devastating forms of trauma. Patients with thermal injury require immediate specialized care in order to minimize morbidity and mortality. Data from the National Center for Injury Prevention and Control in the United States show that approximately 2 million fires are reported each year which result in 1.2 million people with burn injuries [1,2]. The purpose of clinical treatment for burn wounds was to provide healing of the wound as soon as possible in order to prevent infections. Superficial burns do not usually become infected, unless other systemic factors are present. The most commonly reported microbes from a burn wound in the days immediately following the injury are S. aureus and other Gram-positive organisms. Later, Gram negative organisms such as Pseudomonas aeruginosa or coli forms, e.g. E. coli may be implicated [3,4].

Nanotechnology was a highly promising field for generating new applications in environmental remediation, medical healthcare and consumer products [5,6]. Silver nanoparticles have come up to the market by many industries with diverse medical applications ranging from silver based dressings to silver coated medical devices in catheter cover, wound dressing [7,8]. Due to their large surface area and high reactivity compared with a bulk solid, nano-sized metal particles exhibited excellent physico-chemical and biological properties. The antimicrobial mechanism of Ag NPs is generally considered as a multi-factor, multi-way, and multi-target process [9,10]. Previous evidence suggested that Ag-NPs have had potent anti- inflammatory effects [11-13] and accelerated wound healing [14,15]. The ultimate aim for wound healing was a speedy recovery with minimal scarring and maximal function [16].

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