

A scientific literature review on antimicrobial activity of coconut oil as the base oil of indigenous medicinal oil preparations used in wound healing

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Abstract

Coconut is historically significant and most famous food item in Sri Lankan society from the centuries of past. The ancestral wisdom on utility of coconut explicitly demonstrated in cultural heritage of diversified usages in many aspects. Most of indigenous medicinal oils used for wound healing contain coconut oil or coconut milk which mostly appear as the only base oil of such preparations. The objective of this study is to review scientific findings on the antimicrobial activity of coconut oil and demonstrate the rationale of using coconut oil as the base oil for medicinal oils used for wound healing. Since this is a literature review the materials were extracted from the scholarly papers and academic articles published in scientific journals. Coconut oil is a rich source of lauric acid and monolaurin which have statistically revealed significant in vitro broad-spectrum sensitivity against gram-positive and gram-negative bacterial isolates from superficial skin infections. The antimicrobial spectrum includes fungal species such as *Aspergillus* sp., *Penicillium* sp., *Cladosporium* sp., *Fusarium* sp., *Alternaria* sp., *Candida albicans*, *Fonsecaea pedrosoi* and *Cryptococcus neoformans*. In different concentrations coconut oil has exhibited bactericidal activity against *Pseudomonas aeruginosa*, *Escherichia coli*, *Proteus vulgaris*, *Bacillus subtilis* and *Propionibacterium acnes*. Also lauric acid, monolaurin, lactic acid alone and in combination has exhibited in vitro antimicrobial effects against *Staphylococcus aureus* which is involved in a wide variety of infections. These findings support the conclusion of efficacy and therapeutic utility of coconut oil based medicinal oils in proactive treatments of wound healing due to the presence of antimicrobial properties like lauric acid and monolaurin in coconut oil.

Keywords: Coconut oil, wound healing, lauric acid, monolaurin, antimicrobial activity

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