

Antimicrobial Efficacy of Selected Ayurveda Formula against Laboratory Specimen of *Staphylococcus aureus*

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Abstract: Selected formula consisted of three ingredients including dried leaves of *Azadirachta indica*, dried seeds of *Sesamum indicum* and Bees' honey which is clinically use for open wounds. The current study was designed as a microbiological assay and the key objective was to evaluate the antibacterial efficacy of TNK against laboratory specimen of *Staphylococcus aureus* (ATCC25923). The Anti-Bacterial Sensitivity Test was conducted according to the Kirby Bauer method using Agar Well Diffusion method by comparing the effect of Amoxicillin as the positive controller and distilled water as the negative controller in triplicates. The testing drug was assessed as D1 and D2 in 1:2 concentration ratios respectively. Results of the study were obtained through the diameter measurement of inhibitory zone and assessed using one - sample T – test. D1 depicted p value as 0.024 and T – test was 4.44. D2 depicted p value as 0.100 and T- test was 1.89. Comparing to the positive control drug, the hypothesis was generated as $H_0: \mu \leq 19$ mm and $H_1: \mu > 19$ mm. Referring to hypothesis, H_0 of D1 was rejected and H_0 of D2 was not rejected. The significant level was considered less than 5%. D2 concentration of TNK was significant against laboratory specimen of *Staphylococcus aureus*. The study suggests that the TNK is consisted with an extrinsic effective antibacterial application for infected wounds which were caused by *Staphylococcus aureus*. Further clinical study on human subjects will verify the efficacy of TNK in clinical manifestations.

Key Words: Antibacterial Activity, *Staphylococcus aureus*, TNK, Kirby Bauer method

I. INTRODUCTION

Herbs are the key ingredients used in Ayurveda medication. Various parts such as barks, flowers, roots etc. are manually processed in different methods to discover their optimal potential efficacy. Among herbs, *Azadirachta indica* and *Sesamum indicum* are two herbs widely used in Ayurveda pharmacological practice. The current study discusses on antibacterial efficacy of *Thilanimbadi Kalka* (TNK) against laboratory specimen of *Staphylococcus aureus*. The study focusses on wound healing effect due to *Staphylococcul* infections.

Ayurveda authentic text 'Susruta Samhita' and Kaiyadewa Nighantu highlights that *Azadirachta indica* is consisting with *Vruna Shodhana* (wound cleansing) and *Krimighna* (destroying worms / antibacterial) properties. [1-2] Another authentic text ' Bhava Prakash' mentions that leaves of *Azadirachta indica* is effective in cleansing maggot infested wounds. [3] Several recent studies have already proven that *Azadirachta indica* is consisting with antibacterial effects against *Staphylococcus aureus*. [4-5]