Sabah Snake Grass: Nature's Way of Healing

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The leaves of Clinacanthus nutans (Sabah Snake Grass) have long been used traditionally in Asia for treatment of skin rashes and snake bites. Staphylococcus aureus affects one in three people and causes serious bloodstream, bone and joint infections. This project investigates the effectiveness of Clinacanthus nutans leaf extract as an anti-bacterial agent in wound dressings for Methicillin-resistant Staphylococcus aureus (MRSA), the greatest antibiotic-resistant threat, with 94,360 invasive MRSA infections diagnosed in the US annually. Clinacanthus nutans leaf extract was prepared using Plant Tissue Homogenization in methanol, chloroform and hexane. Antimicrobial Sensitivity Testing on Methicillin-susceptible Staphylococcus aureus (MSSA) and MRSA was carried out using the disk diffusion method on nutrient agar. To measure bacterial growth in aqueous medium, a spectrophotometer was used to measure the light absorbance of nutrient broth with added extract. 30mg/mL of methanol-extracted Clinacanthus nutans leaf extract is the optimum concentration in both aqueous and solid media to achieve maximum anti-bacterial effect of 174.19% on MRSA, being as effective as higher concentrations. Its anti-bacterial effect is long-lasting, with 100% effectiveness after 72 hours. When added into agarose, its anti-bacterial effect increases to 438.98% at 99.5% water content and is more effective in greater percentages of water content. Water loss decreases as the water content of agarose increases. The pH of the extract is 7.24, close to neutral and not harsh on human skin. I conclude that Clinacanthus nutans leaf extract in agarose wound dressings can be used as a natural, effective and user-friendly substitute for commercial antibiotics in the wound healing process.

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