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Antimicrobial activities of selected herbs and two herbal decoctions against Methicillin Resistant *Staphylococcus aureus* (MRSA)

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Objectives: To determine the antimicrobial activity of selected herbs against MRSA.

Methods: Aqueous extracts, of dried stem bark of *Pongamia pinnata* (magulkaranda), dried stem of *Rubia cordifolia Linn* (Welmadata), tender leaves of *Jasminum officinale Linn*(Jasmine), dried stem of *Berberis ceylanica* (Daruharidra), *Garcina zeylenica* (Goraka) and two ayurvedic decoctions were prepared following the traditional ayurvedic practice by boiling chopped pieces of herbs in 6 volumes of water down to 1 volume to obtain neat and down to half volume to obtain double (2x) concentrations of the extract. Five clinical isolates of MRSA, were tested in triplicates using well diffusion method with cloxacillin and vancomycin as positive controls. Further minimum inhibitory concentration(MIC) of the aqueous extracts were determined using the pour plate method.

Results: *Garcina zeylenica* had an average zone of inhibition of 13mm against MRSA. The ayurvedic preparation which consists of Dummulla, Ginger, Aralu, Bulu, Nelli, Gon Kekiri, Lunuwila, Katukarosana, dried Turmeric, Venivel and Rasakinda had a 14mm zone of inhibition, and the decoction which consisted of Venivel, Rasakinda, Jasmine, dried grapes, Asamodagam, Aralu, Bulu and Nelli, gave a 16mm zone of inhibition. *Jasminum officinale*, *Pongamia pinnata*, *Rubia cordifolia Linn* and *Berberis ceylanica* did not give a zone of inhibition. The neat concentration was the lowest concentration tested which inhibited growth of MRSA isolates in all three extracts.

Conclusions: Aqueous extracts of *Garcina zeylenica* and the two decoctions have potential antimicrobial activity against MRSA and further studies should be carried out to determine the cell cytotoxicity and in vivo activity of this extract.