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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), *Garcinia 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: *Garcinia 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 *Garcinia 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.

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The access to essential medicines for selected non communicable diseases in Sri Lanka.

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Objectives: To investigate the availability and affordability of essential medicines (EM) prescribed to treat hypertension, acute coronary syndrome (ACS), asthma and diabetes in public and private sectors of Sri Lanka.

Methods: Methodology was based on WHO/HAI manual. Data were collected from a representative sample of public hospital's (PH) OPD pharmacies, Raajya Osusalas (RO) and private pharmacies (PP). Availability and prices of EMs in lowest priced generic (LPG) and originator brand (OB) for above diseases were collected. Percentage availability, median prices, median price ratio (MPR) to the international reference price (IRP) and MPR of OB to government workers LPG were calculated. Affordability was determined using the daily incomes of the lowest paid unskilled

Results: RO had the highest (>80%) availability of LPG. Price of 62% (n=21) of selected medicines was less than 10 Sri Lankan Rupees (SLR). There is no significant difference in prices between RO and PP. The price of OB less than 10 SLR was 81%. There is a significant difference of prices among LPG and OB. The MPR to IRP was less than one for 7 LPG. The OB price for 7 medicines was more than five times of price of LPG. For most of the population, generic medicine prices are affordable. 48% of drugs required less than the daily wage to purchase one LPG for a month.

Conclusions: The EMs for above diseases are readily available in both public and private sectors. Such medicines are affordable to the lowest income earners in the community.