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Green synthesis of sliver nanoparticles using different bacteria: Do the synthesized nanoparticles differ in their antimicrobial activity?

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Objectives: Biosynthesis and characterization of silver nanoparticles (AgNPs) from *Escherichia coli, Acinetobacter baumannii* and *Staphylococcus aureus* and determination of antimicrobial activity against selected pathogens.

Methods: *E. coli* (ATCC 25922), *A. baumannii* (clinical strain), *S. aureus* (ATCC 25923) were cultured in nutrient broth medium and used for biosynthesis of AgNPs. $AgNO_3$ concentration, pH, incubation time and temperature were optimized for AgNP biosynthesis. Antimicrobial activity of the synthesized AgNPs was studied using the well diffusion assay.

Results: All the selected bacteria produced silver nanoparticles at alkaline pH when the concentration of $AgNO_3$ was greater than 0.3 g/L. The optimum reaction temperature was 60°C. UV-Visible spectroscopy with a maximum absorbance of approximately 420 - 430 nm confirmed the presence of AgNPs. AgNPs produced by *S. aureus* resulted in larger zone of inhibition (ZOI) against the selected pathogens where AgNPs produced by *E. coli* showed comparatively smaller ZOI. Gram negative bacteria (*E.coli, P. aeruginosa*) were more sensitive to AgNPs compared to gram positive bacteria (Methicillin Resistant *S. aureus, S. aureus*) and fungal species (*Candida albicans*).

Conclusion: AgNPs produced by *S. aureus* are the most effective among the tested AgNPs while *E. coli* produced the least effective AgNPs.

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Benefits of having a clinical pharmacist in an out-patient renal clinic in Sri Lanka

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Introduction: Laboratory investigations are an essential tool for health care professionals. Clinical pharmacists (CP) are well placed to contribute to pharmacotherapy optimization using laboratory monitoring in their armamentarium. Three examples describe CP associated laboratory monitoring for therapy improvements in an out-patient renal clinic in Sri Lanka.

Case Report:

Case 1: Spiranolactone 12.5mg was commenced in a patient with stage IV chronic kidney disease (CKD) when a low serum potassium level of 2.9mmol/L was detected. This continued to be prescribed even after serum potassium level became high (5.6mmol/L). The CP informed the clinic doctor, who ordered a repeat serum electrolyte level. Serum potassium remained elevated and spironolactone was discontinued.

Case 2: A CKD stage V patient with anemia (hemoglobin 8.62g/dL) had self-discontinued weekly subcutaneous erythropoietin injection two months previously. Since he remained anemic, the CP informed the clinic doctor that the patient had defaulted treatment. The doctor prescribed weekly erythropoietin and a full blood count for the next clinic visit.

Case 3: In a patient with CKD Stage IV and hypercholesterolemia, atorvastatin had been unintentionally omitted from the prescription. No recent lipid profile was available. The CP communicated this to the