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Isolation and Characterization of Methicillin Resistant *Staphylococcus aureus* from different Clinical Samples and to check the efficacy of selected daily diet supplements extract on the Isolated Strains

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Abstract : *Methicillin resistant Staphylococcus aureus (MRSA) infections are one of the major problems in hospitals and nursing homes since the management becomes challenging as it leads to failure towards most of the first line antibiotics. The present study aimed to identify and characterize Staphylococcus aureus isolates that were collected from different clinical samples (Pus, Nasal swab, Skin flora, Blood sample) from Patna (Bihar) region, India. The objective of our present study was to find MRSA and check the multidrug resistance of Staphylococcus aureus. Results indicated that different strains of Staphylococcus aureus show 100% susceptibility to many of the drugs including azithromycin, norfloxacin, nafcillin, cephalothin, tobramycin, spiroxamine, ciprofloxacin. Out of 32% of the isolated strains, 12% strains were shown to be resistant to methicillin and 16% strains were shown to be resistant to vancomycin. Most of the Staphylococcus aureus isolates were found to exhibit multidrug resistance. The aim of our study was also to determine the potential and efficacy of some daily diet supplements for controlling MRSA. 10 different daily diet supplements extract were taken out of which 2 i.e. honey and green tea extract showed the antibacterial activity against the growth of MRSA with average inhibition zone diameter of 20 mm and 15 mm respectively.*

Keywords: *MRSA, Clinical samples, Anti- bacterial activity, Multidrug resistance.*

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Introduction :

Staphylococcus aureus is one of the most harmful species of ***Staphylococci*** encountered. It is the leading cause of multitude of disease including bacteremia, pneumonia, mycarditis, pericarditis, osteomyelitis, encephalitis, meningitis, choriamnionitis, mastitis, and scalded skin syndrome, acute endocarditis. ***Staphylococcus aureus*** is present in the nose (usually temporarily) of about 30% of healthy adults and on the skin of about 20%.

Staph infections may cause disease due to direct infection or due to the production of toxins by