



Antibiotic susceptibility and determination of Minimum Inhibitory Concentration (MIC) of potent antibiotics used against *Staphylococcus* spp. isolated from raw milk

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Abstract : *The uncontrolled use of antibiotics has led to the development of multiple antibiotic resistance, there by rendering the treatment ineffective. In the present study, raw milk samples were collected from different areas of Patna. Out of the 12 isolates obtained, nine were identified as Staphylococcus species. The isolates were examined for their susceptibilities by Bauer Kirby Disc Diffusion test against ten antibiotics. Results showed that incidence of resistance to the antibiotics was quite high, as the maximum susceptibility obtained was only about 13.19%, Rifampicin and Tetracycline being the most ineffective in vitro. Amoxicillin and Cloxacillin were the most effective in phase I exhibiting 12.13% and 11.24% efficacy, respectively, while Ampicillin + Cloxacillin*

was the most effective combination exhibiting 14.31% efficacy in phase II. The MIC values of two antibiotics in pure form and three in combinations were determined by agar dilution and broth dilution methods. The MIC values ranged between 0.5 – 1.0 µg/L showing comparable results throughout the dilution range. However, slightly higher values were obtained for Amoxicillin + Erythromycin and Amoxicillin + Clavulanate i.e. ≥ 1.0 µg/L.

Keywords: Antibiotic efficacy, *Staphylococcus*, MIC values.