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A preliminary study on contamination of retail pork by antimicrobial resistant (AMR) strains of *Staphylococcus aureus* and *Salmonella* spp. in Rathnapura District, Sri Lanka

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Introduction and Objectives: Contamination of retail meat by potential pathogens and their antimicrobial resistant strains contributes to transmission of foodborne disease and the spread of antimicrobial resistance. The current study aimed to determine the contamination of retail pork by antimicrobial resistant (AMR) strains of two potential foodborne pathogens: *Staphylococcus aureus* and *Salmonella* spp. in the Ratnapura District.

Methods: One fresh pork sample was collected from each of the available retail stores (n=7) in the Ratnapura District. Pork samples (n=7) were labeled (S1-S7) and each sample (3 g) was tested for contamination with *S. aureus* and *Salmonella* spp. using selective media and biochemical tests. The colonies that gave positive results for *S. aureus* and *Salmonella* spp. were tested for Methicillin Resistant *S. aureus* (MRSA) and extended spectrum β-lactamase producing (ESBL) *Salmonella* spp. respectively. MRSA in the samples were identified with the cefoxitin screening test and ESBL producing *Salmonella* spp. were identified by the modified double disc synergy test.

Results: All seven pork samples were contaminated with *S. aureus* and *Salmonella* spp. (n=7, 100%). Except for one sample (S4), all the other samples were contaminated with AMR strains. Two samples (S1 and S5) were contaminated with MRSA (n=2, 28.57%). Four samples (S2, S3, S6 and S7) were contaminated with ESBL-producing *Salmonella* spp. (n=4, 57.14%). None of the samples had co-occurring MRSA and ESBL strains.

Conclusions: Although the sample size was small and only one sample was collected and processed from each retail shop, presence of *S. aureus* and *Salmonella* spp. in all the samples and presence of AMR strains in most of the samples is a cause for concern. Further investigations are needed to identify sources of AMR contamination of retail pork, with an increased sample size.

Keywords: *S. aureus* and *Salmonella* spp., Antimicrobial-Resistant Bacteria, Retail Pork

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