Prevalence and Antibiotic Susceptibility of Bacteria in Milk from Subclinical Mastitis Cows in Embilipitiya, Sri Lanka

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Several types of bacteria can be present in cow milk due to contaminated sources in the dairy farms and from cows with infected udder like subclinical mastitis. Antibiotics are used to control mastitis and other diseases in dairy cows. However the erroneous usage of antibiotics can lead to increased resistance among bacteria that may have public health implications. Thus, the present study was carried out from January to September 2018 to assess the prevalence, types and antibiotic susceptibility of bacteria from subclinical mastitis cows` milk. A total of 160 milk samples from 40 lactating cows were collected from four dairy farms in Embilipitiya, Sri Lanka. California Mastitis Test was used to detect subclinical mastitis in cows. Bacteria in milk were identified using selective media (MacConkey, Brilliance coliform, Mannitol etc.), colony morphology, Gram staining and biochemical tests (Catalase, Coagulase, Citrate, Urease etc.). Susceptibilities of the isolates were tested against 9 antibiotics using Kirby-Bauer method. Overall, 16 cows were detected with mastitis. The prevalence of mastitis in quarter-wise and animal-wise were 10% and 40%, respectively. Hind quarters (32.5%) were affected than fore quarters (7.5%) while quarter disposition showed significant difference ($P< 0.01$). *Staphylococcus* sp. (38%) was most frequently found, followed by *Bacillus* sp. (31%), *E. coli* (19%) and *Klebsiella* sp. (12%). Bacterial isolates were susceptible to gentamycin (56%) followed by enrofloxacin (44%) and neomycin (38%). Isolates were highly resistant to tetracycline (75%), cloxacillin (69%) and ampicillin (63%). Forty five percent of the isolates were resistant to one or more antibiotics. In conclusion, findings showed that mastitis can reduce the milk quality due to bacterial content. Appropriate farm management practices and prudent use of antibiotics are necessary to ensure consumer safety by producing high quality milk minimizing the risk of resistant bacteria in milk.

Keywords: Milk, Bacteria, Subclinical mastitis, Antibiotics, Resistant