

## Prevalence, Antimicrobial Susceptibility Pattern and Public Health Significance for Staphylococcus aureus of Isolated From Raw Red Meat at Butchery and Abattoir House in Mekelle, Northern Ethiopia

**Authors :** Haftay Abraha Tadesse

**Abstract :** Background: Staphylococcus is a genus of worldwide distributed bacteria correlated to several infectious of different sites in human and animals. They are among the most important causes of infection that are associated with the consumption of contaminated food. Objective: The objective of this study was to determine the isolates, antimicrobial susceptibility patterns and public health significance for Staphylococcus aureus in raw meat from butchery and abattoir houses of Mekelle, Northern Ethiopia. Methodology: A cross-sectional study was conducted from April to October 2019. Sociodemographic data and public health significance were collected using predesigned questionnaire. The raw meat samples were collected aseptically in the butchery and abattoir houses and transported using ice box to Mekelle University, College of Veterinary Sciences for isolating and identification of Staphylococcus aureus. Antimicrobial susceptibility tests were determined by disc diffusion method. Data obtained were cleaned and entered in to STATA 22.0 and logistic regression model with odds ratio were calculated to assess the association of risk factors with bacterial contamination. P-value < 0.05 was considered as statistically significant. Results: In present study, 88 out of 250 (35.2%) were found to be contamination with Staphylococcus aureus. Among the raw meat specimens to be positivity rate of Staphylococcus aureus were 37.6% (n=47) and (32.8% (n=41), butchery and abattoir houses, respectively. Among the associated risk factories not using gloves reduces risk was found to (AOR=0.222; 95% CI: 0.104-0.473), Strict Separation b/n clean & dirty (AOR= 1.37; 95% CI: 0.66-2.86) and poor habit of hand washing (AOR=1.08; 95%CI: 0.35-3.35) were found to be statistically significant and have associated with Staphylococcus aureus contamination. All isolates thirty seven of Staphylococcus aureus were checked displayed (100%) sensitive to doxycycline, trimethoprim, gentamicin, sulphamethoxazole, amikacin, CN, Co trimoxazole and nitrofurantoin. whereas the showed resistance of cefotaxime (100%), ampicillin (87.5%), Penicillin (75%), B (75%), and nalidixic acid (50%) from butchery houses. On the other hand, all isolates of Staphylococcus aureus isolate 100% (n= 10) showed sensitive chloramphenicol, gentamicin and nitrofurantoin whereas the showed 100% resistance of Penicillin, B, AMX, ceftriaxone, ampicillin and cefotaxime from abattoirs houses. The overall multi drug resistance pattern for Staphylococcus aureus were 90% and 100% of butchery and abattoirs houses, respectively. Conclusion: 35.3% Staphylococcus aureus isolated were recovered from the raw meat samples collected from the butchery and abattoirs houses. More has to be done in the developed of hand washing behavior, and availability of safe water in the butchery houses to reduce burden of bacterial contamination. The results of the present finding highlight the need to implement protective measures against the levels of food contamination and alternative drug options. The development of antimicrobial resistance is nearly always as a result of repeated therapeutic and/or indiscriminate use of them. Regular antimicrobial sensitivity testing helps to select effective antibiotics and to reduce the problems of drug resistance development towards commonly used antibiotics. Key words: abattoir houses, antimicrobial resistance, butchery houses, Ethiopia,

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