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Serological survey of porcine cysticercosis and associated risk factors in pigs slaughtered at Ndumbuini abattoir in Nairobi, Kenya

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Background: *Taenia solium* is ranked as the most important foodborne parasite globally. Cysticercosis is caused by the larval stage of *T. solium* and is a serious public health risk in both rural and urban areas. Eastern and southern Africa have experienced a recent rapid growth in pig production, with increasing number of cysticercosis reports being received in concurrence with increasing smallholder pig keeping and pork consumption. However, there have been few studies undertaken in Kenya to investigate cysticercosis and more information is needed to assess transmission to humans.

Methods & Materials: This study was conducted in Ndumbuini, the main abattoir supplying pork to middle-low income consumers in Nairobi. The aims of the project were to: estimate the seroprevalence of cysticercosis; map the value chains associated with the abattoir; and assess the risk of cysticercosis-infected pork entering Nairobi food system. Blood samples were obtained from 700 pigs selected by systematic random sampling. Antigen ELISA was used to detect *T. solium* secretory antigen, while structured questionnaires, focus group discussions and observational tools were used to assess the risk factors.

Results: The overall seroprevalence of cysticercosis was estimated at 8.5% (95% CI: 6.4–10.7%). Pigs originated from 11 different counties. The prevalence rates ranged between 0–36%. Seven counties had seropositive pigs, four showed no positives. There was significant differences between sex ($p=1$) or age ($p=0.13$) of the pigs sampled. No positive cases were detected by post-mortem meat inspection. Therefore, all the carcasses were passed for human consumption. The abattoir had no facilities for treating *Cysticercus solium* infected carcasses.

Conclusion: This study highlights that *T. solium* is a public health risk to consumers of pork from Ndumbuini abattoir. We therefore recommend that meat inspection by palpation and incision be complemented with rapid tests. A wide scale general public sensitization should be undertaken.

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Coagulase positive staphylococci and food poisoning toxins - A case study of an outbreak investigation occurred in a shepherd hut

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Background: Staphylococcal food poisoning (SFP) is an intoxication caused by the ingestion, with food, of emetic staphylococcal enterotoxins (SEs) produced by enterotoxigenic strains of coagulase positive staphylococci (CPS): especially *Staphylococcus aureus*. Staphylococci are commonly found in humans and in a wide variety of animals. The contamination of food with CPS is commonly caused by inadequate food processing methods or the use of mastitic milk. In case of staphylococcal mastitis of ruminants, *S.aureus* can be carried over from the udder into milk. Thus unpasteurized milk cheeses, contaminated by enterotoxigenic strains of staphylococci, may be involved in SFP outbreaks.

Methods & Materials: During August 2015 symptoms referable to SFP were described in a group of excursionists after eating raw milk cheese produced in a south tyrolean malga (shepherd hut). As consumption of cheese has been supposed to be a common risk factor, the case has been reported to the Local Veterinary Service that tried to rule out the source of the outbreak in cooperation with IZSVE-laboratory.

Cheese sample, bulk tank milk and individual milk samples from the 41 dairy cows, reared at the malga, were collected.

Food sample were analyzed for SEs type A, B, C, D performed according to the EU-RL screening method for CPS v5 (extraction followed by dialysis concentration and immuno-enzymatic detection). CPS were counted in cheese according to ISO 6888-2:1999. CPS were tested for SEs genes by PCR and biotyped for addressing host specificity by Italian National Reference for CPS.

Results: Mean value of CPS in cheese was 2600 cfu/g and presence of SEs was confirmed (test value > 2,20). *S.aureus* have been isolated from bulk tank milk and from 23,8% of individual milk samples. Just one of the 41 cows was reported with clinical mastitis. CPS were submitted to antibiogram without encountering any detectable resistance. *S.aureus* strains have been submitted to PCR test for genes encoding SEs.

Conclusion: Bacterial contamination of raw milk can occur even under optimal hygiene conditions, and the discrimination of the toxigenic nature of the strains can facilitate the management of potentially risky situations. Importance of SFP for public health justifies further investigation.

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