Prevalence and antimicrobial susceptibility pattern of thermophilic Campylobacter spp. isolated from ovine carcasses and faeces in Ethiopia

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Background
Thermophilic Campylobacter spp. are a frequent cause of food-borne illness worldwide. In Ethiopia, Campylobacter spp. are the most frequently isolated bacteria from stools of children with diarrhea. Livestock, particularly chicken followed by ruminants and pigs are natural intestinal carriers of Campylobacter spp.

Methods
• A cross-sectional, abattoir-based study was conducted in 2014 in the Central Highlands of Ethiopia to determine the prevalence and antimicrobial resistance of thermophilic Campylobacter spp. in sheep carcasses and faeces. Composite environmental samples were also taken from the surfaces of walls, personnel’s hands, knives, hooks and aprons.

• Hippurate hydrolysis and susceptibility to nalidixic acid formed the basis for the identification of C. jejuni, C. coli and C. lari.

• Antimicrobial susceptibility test was performed using the standard disc diffusion method towards 12 antimicrobials.

Results
• From 160 carcass swabs, 21 (13.1%) were positive for Campylobacter, of which 12 (57.1%) were C. jejuni, six (28.6%) were C. coli and three (14.3%) were C. lari.

• Examination of 160 rectal swab samples revealed that 12 (7.5%) were harbouring thermophilic Campylobacter spp.

• A total of eight environmental samples were examined and seven (87.5%) of them were positive for thermophilic Campylobacter spp.

• Multidrug-resistance to two or more antimicrobials was detected in 11/21 (52.4%) of the isolates.

• Resistance was highest to amoxicillin-clavulanic acid (42.1%) and kanamycin (42.1%).

Conclusions
• At the abattoir, carcass contamination should be reduced during the slaughter process to protect the public from exposure to pathogenic Campylobacter spp.

• We detected multidrug resistance to drugs not used in the treatment of sheep, suggesting that the origin of resistance was drugs used to treat human infections.