Campylobacter spp in poultry meat

Prevalence of *Campylobacter* spp in poultry meat at retail and processing plants' levels in Central Italy

Ziad Mezher[1], Stefano Saccares[1], Rita Marcianò[2], Paola De Santis[1], Eda Maria Flores Rodas[1], Veronica De Angelis[1], Roberto Condoleo[1]

[1] Istituto Zooprofilattico Sperimentale delle Regioni Lazio e Toscana, , M. Aleandri (IZSLT), Via Appia Nuova 1411, 00178, Roma.
[2] Regione Lazio – Area Sanità Veterinaria

Introduction

Human campylobacteriosis is the most commonly reported gastrointestinal disease in Europe and *C. jejuni and C. coli* are the two species most frequently involved in such foodborne disease. Human infection may occur through many ways and raw meat, particularly poultry meat is the leading cause of domestically acquired foodborne illnesses in humans.
Based on the sampling plan established in the region of Lazio (Central Italy) the aim of our work was to investigate the prevalence of *Campylobacter* spp in poultry meat preparations collected by the local veterinary authority at retail shops and processing plants. We also observed whether various factors affected the isolation rate.

Materials and Methods

209 fresh poultry meat preparations (162 chicken, 34 turkey and 13 mixed) were collected between 2011 and 2014 and analyzed by microbial culture in accordance with ISO 10272:2006. Isolates were then species-identified using two different PCR qualitative assays. Many aspects were considered during sampling such as type of food, packaging status and sampling stage (plant or retail).

Results

- Overall prevalence was 5.7% (12/209)
- 11 chicken meat samples were positive (11/162, 6.8%)
- None of the turkey meat preparations resulted positive (0/34)
- One mixed meat preparation was positive (1/13, 7.7%)
- 7 strains were identified as *C. coli*, 3 were *C. jejuni* species and one isolate was different from *coli/jejun*i species
- Prevalence was higher at retail (10/146, 6.4%) and in unpackaged (6/50, 10.7%) products

Matrix information	Sample type	Total units tested	Total units positive
Whole carcass		9	0
Minced meat preparations	Hamburger	27	1
	Fresh sausage	15	0
	Other	24	0
	Total	66	1
Meat preparations	Wings	9	0
	Thighs	51	6
	Breast	42	2
	Other	32	3
	Total	134	11
Total		**209**	**12**

Discussion

- The rate of isolation was significantly lower (5.7%) in comparison to other studies which could be explained by the increased level of attention during slaughter
- All the strains except one belonged to major zoonotic *Campylobacter* species that are considered to have a relevant impact on public health
- Chicken meat preparations turned out to be more contaminated than turkey meat preparations which is in line with a recent EU report
- Higher prevalence was observed in samples from retail and in unpackaged products and could be explained by cross contamination as a result of greater handling of the product
- Chicken thighs were the most contaminated probably because such cuts are most at risk in view of the anatomical proximity to the final part of the digestive tract

References

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Full references available upon request

Email: ziad.mezher@izslt.it