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BRIEF COMMUNICATION

CARRIAGE OF THE CLASSICAL THERMOTOLERANT CAMPYLOBACTERS IN HEALTHY DOMESTIC ANIMALS FROM EASTERN PERU.

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During last years, the classical thermotolerant campylobacters *(C. jejuni ssp. jejuni, C. coli and C. lari)* have become recognized as important agents of bacterial diarrhea in some countries [6, 12]. These organisms are widespread in the animal kingdom; they recognize as natural reservoirs a great variety of wild and domestic birds and mammals that could be a source of contamination for humans, other animals, foods and surface water bodies [6, 14].

Nevertheless, there is not enough information about the carriage of thermotolerant campylobacters in this region (eastern Peru), for this reason we considered to determine the prevalence of. *C. jejuni ssp. jejuni, C. coli* and *C. lari* in a variety of healthy domestic birds and mammals.

Samples were obtained by cloacal or rectal swabs from healthy domestic animals (100 chickens, 50 ducks, 50 turkeys, 50 pigeons, 75 cows, 75 pigs, 50 dogs, 50 cats and 50 parrots), from different peri-urban zones of Iquitos city (in the Peruvian jungle region, southern latitude 3°45'). All samples were immediatly placed into the semisolid enrichment medium proposed by FERNANDEZ [5] and streaked on modified Skirrow plates [3]. These were incubated at 42°C for 48h, in microaerophilic conditions.

Suspected colonies were identified morphologically (Gram stain) and biochemical characterization of the isolates was done using the differential tests proposed by LIOR [9] and GOOSSENS & BUTZLER [7]. Antimicrobial susceptibility to nalidixic acid (30 μg) and cephalotin (30 μg) was determined by disc diffusion assay on FBP-blood agar incubated at the same conditions mentioned above.

The results obtained showed that 146 (26.5%) of the domestic animals studied yielded thermotolerant campylobacters (Table 1). This isolation rate is lower than that obtained by FERNANDEZ [4] (46.3%) in fecal samples from birds and mammals in Southern Chile.

The highest prevalence of these microorganisms was registered in chickens (54.0%) and ALVAREZ & FLORES [1] and SVEDHEM & KAIJSER [13] indicated that chickens are the most important reservoirs of *C. jejuni*. In Peru, *C. jejuni* has been isolated from 88.0% of commercial chickens and 50.0% of free-ranging domestic chickens in a peri-urban shanty town community of Lima (cited by MARQUIS et al. [10]).

In our study, the prevalence of *Campylobacter spp.* in pigs (44.0%) was lower than that reported by FERNANDEZ [4] in Chile (70.0%); however, these mam-

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TABLE 1
Prevalence of thermotolerant campylobacters isolated in healthy domestic animals from Eastern Peru.

Animals		*C. jejuni ssp. jejuni*				*C. coli*		*C. lari*		
studied	n	I	II	III	IV	I	II	I	II	TOTAL
Chickens	100	16 (16.0)*	10 (10.0)	1 (1.0)	0 (0.0)	5 (5.0)	12 (12.0)	6 (6.0)	4 (4.0)	54 (54.0)
Pigs	75	6 (8.0)	4 (5.3)	0 (0.0)	0 (0.0)	12 (16.0)	11 (14.7)	0 (0.0)	0 (0.0)	33 (44.0)
Turkeys	50	9 (18.0)	6 (12.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (4.0)	0 (0.0)	0 (0.0)	17 (34.0)
Ducks	50	3 (6.0)	6 (12.0)	0 (0.0)	0 (0.0)	3 (6.0)	1 (2.0)	0 (0.0)	0 (0.0)	13 (26.0)
Pigeons	50	2 (4.0)	6 (12.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	5 (16.0)
Dogs	50	1 (2.0)	2 (4.0)	0 (0.0)	0 (0.0)	2 (4.0)	1 (2.0)	0 (0.0)	0 (0.0)	6 (12.0)
Cats	50	4 (8.0)	1 (2.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	5 (10.0)
Cows	75	5 (6.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.3)	0 (0.0)	0 (0.0)	6 (8.0)
Parrots	50	3 (6.0)	1 (2.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	4 (8.0)
TOTAL	550	49 (8.9)	36 (6.5)	1 (0.2)	0 (0.0)	22 (4.0)	28 (5.1)	6 (1.1)	4 (0.7)	146 (26.5)

* ( ) = %

mals had the highest faecal carriage of *C. coli*. Some investigators [3, 11] have reported this organism like a member of the normal intestinal flora of pigs.

The isolation rates of *Campylobacter spp.* from turkeys and ducks faecal samples (34.0 and 26.0%, respectively) were slightly lower than pigs whereas in the other animals studied (pigeons, dogs, cats, cows and parrots), the isolation rates were the lowest (16.0, 12.0, 10.0, 8.0 and 8.0, respectively). The low isolation rates found in dogs and cats could be due to the fact that most of these animals lived in habitats with good conditions of hygiene and health and each one had one owner.

Our results indicate that these animals may be sources of contamination for man but with low importance than other domestic animals previously mentioned.

C. jejuni ssp. jejuni biovar I was the most frequently isolated (8.9%) and it was found in all the animal species examined; *C. coli* was isolated from all the domestic animals studied but not from pigeons, cats and parrots, with a frequency of 4.0 and 5.1% for their biovars I and II, respectively.

C. lari was isolated only from chickens with an average frequency of 1.1 and 0.7% for their biovars I and II, respectively. Different investigators have obtained some isolates of this bacteria from a variety of birds and other animals, although it was chiefly recovered from the intestinal contents of wild herring gulls *(Larus argentatus)* [2, 8, 9, 14].

Our results confirm chicken's importance as classical thermotolerant campylobacters reservoir in Eastern Peru, and should remind us to search for the microorganisms in gastroenteritis cases, specially when the patient has close contact with these birds; the same should be taken into account for children in peri-urban zones of Iquitos city that grow these animals in their homes.

We considered that more studies are necessary to understand the epidemiology of campylobacteriosis that seems to be a very complex phenomenon in eastern Peru.

RESUMO

Presença dos clássicos campylobacters termotolerantes em animais domésticos sadios do leste do Perú.

Com o objetivo de conhecer a importância dos animais domésticos como reservatórios naturais dos clássicos campylobacters termotolerantes, amostras de fezes foram obtidas de mamíferos e aves do leste do Peru e imediatamente colocadas num meio de enriquecimento. Técnicas convencionais foram utilizadas para identificar *C. jejuni ssp. jejuni, C. coli e C. lari.*

Campylobacter foi isolado em 26,5% dos animais estudados, sendo *C. jejuni ssp. jejuni* biovar I o mais freqüente (8,9%). O frango foi o reservatório mais importante destes microorganismos (54,0%).

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