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Activity of Fosfomycin on Clinical Isolates of *Campylobacter jejuni* and *Campylobacter coli* of Enteric Origin

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We read with interest the report by Aguilar-Company et al. (1) on two cases of recurrent enteritis due to *Campylobacter coli* successfully treated with oral fosfomycin-tromethamine. *Campylobacter* spp. are among the main microorganisms responsible for enteritis and are the principal cause of bacterial diarrhea in our setting, ahead of the genus *Salmonella*; they are responsible for 44.0% of cases, a percentage that has substantially increased over recent years (2). Although the disease is often mild and self-limiting, it is frequently observed in patients with immunologic alterations and there is growing resistance to macrolides and fluoroquinolones, increasing the risk of a lethal outcome (3).

It is vital to determine the *in vitro* susceptibility of *Campylobacter* spp. to antibiotics that might offer an effective alternative to current first-line drugs. The Clinical and Laboratory Standards Institute (CLSI) and the European Committee on Antimicrobial Susceptibility Testing (EUCAST) have established breakpoints for their susceptibility to macrolides, fluoroquinolones, and tetracyclines but not for their susceptibility to fosfomycin (4, 5), despite the evidence of favorable clinical outcomes reported by Aguilar-Company et al. (1) and others. Given the potential therapeutic usefulness of fosfomycin against *Campylobacter* spp., we support the call by these authors to establish MIC breakpoints and track resistance rates in different geographic settings. For this reason, besides the usual testing of erythromycin and ciprofloxacin, the Microbiology Department of the Granada University Hospital Complex in southern Spain carried out a prospective study of the susceptibility to fosfomycin of all clinical isolates of *Campylobacter jejuni* and *C. coli* obtained from stool cultures during June and July 2016.

Etest strips containing erythromycin, ciprofloxacin, and fosfomycin supplemented with glucose-6-phosphate were purchased from bioMérieux (Marcy l'Etoile, France). The Etest has demonstrated results comparable to those obtained with standard methods approved by CLSI and EUCAST (6). It was performed with Mueller-Hinton agar plates with 5% sheep blood (Becton Dickinson, Sparks, MD) that were inoculated with 0.5 McFarland inoculum suspensions. After application of the Etest, plates were incubated at 42°C in a microaerophilic atmosphere (Campygen; Oxoid, Basingstoke, United Kingdom) and MICs were read at 24 h. The MICs, which are summarized in Table 1, were interpreted according to the clinical breakpoints published by CLSI (4) and EUCAST (5). As shown, all isolates were resistant to ciprofloxacin and three of them were also resistant to erythromycin.

In 2014, a study in our center recorded resistance rates of 87.2% for ciprofloxacin, 3.5% for erythromycin, and 89.5% for tetracycline in 86 *C. jejuni* isolates from stool cultures and 100, 21.4, and 92.9% rates of resistance to the respective antibiotics in 14 *C. coli* isolates (unpublished data). Hence, fluoroquinolones and tetracyclines are not appropriate therapeutic options in our setting, whereas susceptibility to macrolides, the first-choice antibiotics, appears to be maintained. In the case of fosfomycin, although

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TABLE 1 Erythromycin, ciprofloxacin, and fosfomycin MICs for *Campylobacter* isolates

Microorganism	MIC (category)[a]		
	Erythromycin	Ciprofloxacin	Fosfomycin
C. jejuni	0.5 (S)	>32 (R)	6
C. jejuni	0.25 (S)	>32 (R)	32
C. jejuni	0.5 (S)	>32 (R)	>256
C. jejuni	25 (I/R)[b]	>32 (R)	1.5
C. jejuni	1 (S)	>32 (R)	16
C. jejuni	1.5 (S)	>32 (R)	16
C. jejuni	0.75 (S)	>32 (R)	32
C. jejuni	0.75 (S)	>32 (R)	24
C. jejuni	0.75 (S)	>32 (R)	6
C. jejuni	1.5 (S)	>32 (R)	24
C. jejuni	1 (S)	>32 (R)	16
C. jejuni	0.5 (S)	3 (I/R)[b]	>256
C. jejuni	1 (S)	>32 (R)	12
C. jejuni	0.75 (S)	>32 (R)	92
C. jejuni	0.5 (S)	>32 (R)	6
C. jejuni	0.5 (S)	>32 (R)	16
C. jejuni	0.38 (S)	>32 (R)	>256
C. coli	3 (S)	>32 (R)	24
C. coli	2 (S)	>32 (R)	>256
C. coli	>256 (R)	>32 (R)	>256
C. coli	>256 (R)	12 (R)	24
C. coli	0.75 (S)	>32 (R)	96

[a]The values are in milligrams per liter. The clinical categories, according to CLSI (4) and EUCAST (5) breakpoints, are as follows: S, susceptible; I, intermediate; R, resistant.
[b]Intermediate by CLSI breakpoint and resistant by EUCAST breakpoint.

no breakpoints have been established, the present MICs were so high (range, 1.5 to >256 mg/liter) that it cannot be considered active against these isolates of *Campylobacter* spp., in contrast to the observations of Aguilar-Company et al. (1).

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