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***Campylobacter* is the leading cause of bacterial gastroenteritis and dysentery in hospitalized children in the Western Galilee Region in Israel**

To The Editor:

In their paper, Stein-Zamir *et al.* describe population-based, age-specific epidemiological trends of enteric bacterial infections in children in the Jerusalem district in Israel during 1990–2008 [1]. Overall, during the study period *Shigella* was the leading bacterial pathogen, especially in children aged <5 years. *Shigella* infections were characterized by an endemic-epidemic pattern. The incidence of *Salmonella* infection increased in the early 1990s and then declined after 2000. *Campylobacter* gastroenteritis rates increased steadily and by 2008 it became the leading cause of diagnosed bacterial enteric infection being particularly predominant in infants aged <6 months.

Previous studies from Israel conducted in the 1990s demonstrated the infrequency of *Campylobacter* infections in children with gastroenteritis: Finkelstein *et al.* found *Campylobacter* in only 2% of hospitalized dysenteric children in one hospital in central Israel [2] and Lerman *et al.* found that only 1% of children with acute diarrhoea living in a kibbutz in central Israel had *Campylobacter* infection [3].

We recently conducted a retrospective study of all hospitalized children with gastroenteritis in the Western Galilee Hospital in Nahariya, Israel during 24 months in 2007–2009. The hospital serves a population of 500 000 people in the Western Galilee area in northern Israel. In the study, charts of hospitalized children with gastroenteritis of bacterial aetiology were identified and reviewed. We found 99 children admitted with bacterial gastroenteritis; *Campylobacter* was identified in 61%, *Shigella* in 24%, and *Salmonella* in 16%. Of children with dysentery ($n = 63$), *Campylobacter* was isolated in 72% whereas

Shigella was isolated only in 19%. *Campylobacter* was the infecting cause in 94% of dysenteric children aged <1 year. We also identified nine young, afebrile infants aged <3 months with blood-streaked stools; eight had stool cultures positive for *Campylobacter* [4].

Interestingly, in contrast to our findings, the recent European guidelines for the management of acute gastroenteritis in children state that *Campylobacter* is the most common bacterial pathogen beyond the age of 5 years, implicating different epidemiology of enteropathogens in children in Europe [5].

Our study supports the new trends among bacterial gastroenteritis pathogens in Israel, and especially for *Campylobacter*, demonstrated by Stein-Zamir *et al.* and does so in a different region of Israel, and in hospitalized children. This emphasizes the importance of *Campylobacter* in Israel as the main pathogen of bacterial gastroenteritis and dysentery, especially in young infants and calls for studies focusing on interventions to decrease the transmission of the pathogen to humans.

Declaration of Interest

None.

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The authors reply:

The growing burden of campylobacteriosis in infancy and early childhood is indeed worrying. The predominance of *Campylobacter* in hospitalized children with gastroenteritis of bacterial aetiology (61%), and specifically in infants aged <1 year (94%), as reported in the above letter by Dayan *et al.* in Northern Israel during 2007–2009, is noteworthy. Their findings concur with ours on epidemiological trends of enteric bacterial infections in Jerusalem in indicating a consistent rise in the incidence of *Campylobacter* infections, especially in infants aged <1 year [1].

For some years *Campylobacter* infection notifications have consistently been on the rise in Israel. According to Ministry of Health reports, the number of reported cases increased by 22%, from 4444 in 2008 to 5684 in 2009. Between 2007 and 2009 there was a 38% increase, and from 2005 a 48% increase [2]. The national incidence rate per 100 000 population increased from 40.03 in 2005 to 75.8 in 2009 (RR 1.89, 95% CI 1.81–1.98, $P=0.0001$). In the Jerusalem district *Campylobacter* was the predominant bacterial pathogen in infants, accounting for 49.5% and 57% of cases in 2008 and 2009, respectively.

While *Shigella* infections are traditionally considered to be transmitted from person to person

(especially in childcare facilities), *Salmonella* and *Campylobacter* are considered to be foodborne and environmental infections.

Campylobacter infections topped the list of zoonotic diseases in the European Union, according to the Community Zoonoses Report for 2007 published by the European Food Safety Authority (EFSA) and the European Centre for Disease Prevention and Control (ECDC). According to that report, there were 200 507 cases of *Campylobacter* in 2007 in the EU compared to 175 561 in 2006, a 14.2% increase [3]. In 2008, *Campylobacter* continued to be the most commonly reported gastrointestinal bacterial pathogen in humans in the EU, as in the previous 4 years. The number of reported confirmed human campylobacteriosis cases in the EU decreased by 5.0% in 2008 compared to 2007. The reduction in confirmed reported cases was accompanied by a decrease in the overall EU notification rate from 45.2/100 000 population in 2007 to 40.7/100 000 population in 2008 [4].

Considerable veterinary efforts aimed at controlling *Salmonella* in poultry were fruitful. Similar efforts should be aimed at *Campylobacter* now. It is well known that Israelis consume plenty of chicken (and chicken soup), so we really need to take care!

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