

Acute diarrhoea: new perspectives

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Keywords: Antibiotics, diarrhoea, EPEC, gastroenteritis, pathogens, rotavirus

Article published online: 24 January 2015

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“We are in the middle of a paradigm shift in bacterial infectious diseases” [1]. This statement, by Didier Raoult, emphasizes the role of individual clones in bacterial epidemics. It also unrestrictedly holds true for the role of microbiological laboratory diagnostics in community-acquired gastroenteritis today. An episode of diarrhoea is never pleasant. Usually it is of short duration—lasting just a few days—with infection the major cause. However, the high numbers of potential enteric pathogens, coupled with the availability of new rapid detection techniques, presently coerce microbiology laboratory users to review protocols for ordering tests and analyses in order to improve efficiency and timeliness of infectious diarrhoea diagnoses.

The width of the spectrum of possible enteric pathogens is impressively underlined by the results of a study published in this issue [2]. Under the auspices of the ESCMID Food- and Water-borne Infections Study Group (EFWISG), Spina *et al.* performed a European multicentre, cross-sectional quarterly point prevalence study on community-acquired diarrhoea. The aim was to determine the range of possible pathogens in acute community-acquired gastroenteritis using both conventional laboratory techniques and a commercially available multiplex PCR-based system. A high proportion of specimens positive for multiple organisms (“mixed infections”) were detected. Enteropathogenic *Escherichia coli* and/or enteroaggregative *E. coli* were present in 84% of samples with multiple organisms, which—according to Spina *et al.*—raises the question of the true clinical relevance of these pathogens.

In this issue of CMI, Hu and Torres also discuss the topic “Enteropathogenic *Escherichia coli*: Foe or Innocent Bystander?” and conclude that typical EPEC are found to be strongly

associated with cases of diarrhoea [3]. However, occurrence of so-called atypical EPEC in hosts with or without diarrhoea fuels the question of the role of these pathogens in human disease, a question that—according to Hu and Torres—cannot be answered by current epidemiologic data. As Martin J. Blaser recently phrased it: “It’s tempting to think of pathogens as intrinsically evil, but they’re not” [4].

Finally, prevention of illness is always superior to, or at least more desirable than, treatment of illness. In their review, “Rotavirus Vaccines: A Story of Success,” Kollaritsch *et al.* underline the potential of vaccination in preventing community-acquired diarrhoea [5]. After implementing rotavirus vaccines in childhood immunization programs, rotavirus hospitalizations were observed to be reduced more than 90% in many settings in both the industrialized and resource-deprived world.

One of the dilemmas in assessing patients with acute diarrhoea is deciding when to initiate antimicrobial therapy. The role of antibiotics in the therapy of acute gastroenteritis is summarized by Zollner-Schwetz and Krause in another review published in this issue [6].

Routine diagnostic laboratories always struggle to improve their diagnostic repertoire. To our chagrin, this endeavor is probably endless. Yet many types of solutions are already available. Multiplex screening can optimize the yield from stool examinations, can dramatically improve timeliness of diagnosis and can facilitate comparability of results among different laboratories. I envisage that in the near future, conventional laboratory methods directed at isolating specific pathogens will become second-line tools, to be deployed only when multiplex screening deems it necessary. The time has come for us to begin implementing these syndromic tests in our daily routine.

Transparency declaration

The author reports no conflicts of interest relevant to this editorial.

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