Salmonella enterica serovar Typhi infection: a public health problem in Latin America and the automated microbiological methods

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Dear Editor

We recently received a letter to the editor (1) about our recent clinical case published in this journal (2). The public health problems faced in Brazil and other Latin American countries are recurrent and involve multiple causes. Some determinant factors in health are related to the configuration of health quality. There is still regional heterogeneity and we could even think of a geopolitical fatalism. Access to health systems, for example, is not the same for the entire population even within the same State/Province. Regarding the diagnosis of pathologies, the situation is similar, since not all districts have the same access, the same quality and the same medical-outpatient-hospital care. In this context, typhoid fever stands out as a disease that has already caused major problems to the general population, and despite presenting a certain decrease, remains a matter of concern. The current typhoid fever incidence is directly related to sanitary conditions, reflecting the social disparities that are widely present in Latin American countries.

The present study didn´t aim to describe the disease itself, a knowledge widely described in the medical literature, not even to make an overview of public health, because is not our primary activity area, we also didn´t intend to evaluate the performance of automated diagnostic, since we are facing a clinical case (2).

Thus, what we intended was to describe a case of Salmonella enterica serovar Typhi infection that could have been neglected or inadequately reported, along with the advantages of automated microbiological methods to improve systemic infection diagnosis.

Regarding the infection, there is no doubt that Salmonella enterica serovar Typhi was the real causative pathogen. The patient clinical manifestations, the sanitary conditions of the environment along with two positive blood culture presenting the same microorganism allows us to affirm that it wasn´t contamination. Nevertheless, there was extensive discussion among the professionals involved, obtaining the data and analyzing the clinical information.

Automated blood culture provides, safety results and practicality to the routine, as it increases operational efficiency by presenting a safe technique of continuous monitoring and standardized workflow, in addition to a considerable cost reduction. In this context, it is important to highlight: low sample volume, allowing a greater number of samples without impairing patient's blood volume or microorganism growth; positive and negative alarms; temperature controllers, to ensure incubation stability; user-programmable reading times; graphs representing the results, performed from a primary algorithm and measured by two secondary algorithms, with sample positivity time; easy visualization of positive vials by color difference; indicator of reactive positivity to CO_2 and pH changes, doubling the efficiency, reducing positivity time; polymeric adsorption resin and cationic resin in the same vial, ensuring a greater bond with antibiotics and increased positivity of samples (3).

Several studies in the literature confirm the relevance of the use of an automated blood culture system. "The data are in line with the evidence raised in the literature, reinforcing the greater sensitivity of the automated blood culture method. The higher cost with an automated method can become a great economy in the use of antimicrobials, besides contributing to a

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better prognosis in the case of systemic infections" (3).

Finally, in relation to MALDI-TOF mass spectrometry, there is a growing bibliography regarding its usefulness and great performance for the diagnosis of infectious pathologies and in particular in Salmonella enterica serovar Typhi (4,5). Other representative works published previously, will also be interesting to clarify and mitigate any doubts.

We thank you for reading our work and for the questions presented. It is beyond price our interest in science and studies that, above all, seek to contribute to health professionals/scientific research performance.

Conflict of interest

The authors declare that they have no conflict of interest.

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