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Case Report Typhoid Fever at PGI Cikini Hospital, Jakarta: Is It Typhoid Fever?

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COMMENTARY

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Abstract

This commentary is resulted as a response to a case report "Typhoid Fever at PGI Cikini Hospital, Jakarta" written by Ramatillah et al., in 2015. The authors presented a systematic case of typhoid fever, but was elusive in certain points, including the clinical presentation, treatment with respect to antimicrobial and supporting therapies and laboratory result. This commentary serves different opinion from that of Ramatillah et al., with respect to clinical diagnosis, therapy and laboratory of typhoid fever.

Keywords: *Typhoid fever, antimicrobial, ciprofloxacin, Salmonella typhi, widal test*

Introduction

Typhoid fever (TF) is one of the most common infectious disease in developing country with poor sanitation and restricted public health service. Indonesia as a rural, developing country, has a significant incidence of enteric fever particularly in younger age group, and already spent a lot of money to design an effective strategy in typhoid eradication[1,2]. The case report of typhoid fever in Jakarta, published by Ramatillah, et al in 2015 in this journal presented a systematic report describing clinical signs and symptoms, laboratory supports, and treatments closely suspecting to case of infection[3]. However, the report has some issues which are important to be clarified.

A. Main Text

1) Does the clinical presentation refer to diagnosis of TF?

Fever is often presented to patients suffering an infection. It ranges from mild to severe, depending on the causal agents and clasically TF finds as fever with a slow, stepladder-like pattern. Other symptoms may coexist with fever, such as vomiting, diarrhea, abdominal pain, anorexia, jaundice and myalgia. However, these classic findings are unlikely seen in common patients as widely use of antimicrobial has led to a change in the presentation. Ramatillah, et al presented Mr. OS with high fever with random pattern, headaches, nausea, vomiting, myalgia, and diarrhea[3]. These presentation are supported by Bhutta's publication in 2006[4].

Nevertheless, the findings seemed weak of evidences since such presentation may also arise from other infectious disease. Ramatillah, et al, furthermore, did not dig the probability patient suffering toxicity due to severe of S. typhi infection and did not present physical examination result which is obviously important to diagnose a disease.

2) Is ciprofloxacin the most suitable antimicrobial treatment?

TF is caused by an organism named *Salmonella enterica*. This aerobic, flagellated and gram-negative bacteria has a numerous serovar which can infect a variety of animals, and paticularly S.

enterica serovars typhi and paratyphi are responsible as causal organisms of TF in human[5]. Many antimicrobial agents have been reported susceptible to S. Typhi and paratyphi, but the effectiveness of each antibiotic may vary. First line drug monotherapy such as ampicillin, chloramphenicol, and cotrimoxazole is still favorable in developing countries[6]. However, due to a variety of multi-drug resistance (MDR) reports, it is more common to use fluoroquinolone single therapy as the empirical choice in USA. Cephalosporin, azithromycin and their combination are also considered as drug of choice because of an increasing report of fluoroquinolone resistance in both developing and developed worlds[6-8].

Ramatillah, et al[3] presented the patient was given ciprofloxacin, a second generation of fluoroquinolone, 400 mg twice a day through intravenous line. This antibiotic was given for 6 days and continued single dose, oral ciprofloxacin for 7 days. The consideration of the clinician to choose the route of antibiotic is not fully understood and remains unclear. It was likely that the clinician chose the antibiotic injection since the patient suffered severe vomiting, and as a consequence, the antibiotic was not administered orally. Therefore, the author should described more details about what other therapies were given to reduce other symptoms.

3) Does the clinical laboratory results support the diagnosis?

Several options of laboratory tests may be helped for diagnosing TF. These include antigen detection, bacterial culture, DNA amplification, and serological markers, but all these laboratory have each advantages and disadvantages[9]. The patient presented on the case had an elevated liver enzymes (SGOT/AST and SGPT/ALT), leukopenia, and the most interesting finding is negative result of Widal test. As the result of Bhutta's investigation, jaundice is one of the most common features seen in patient with typhoid fever[4]. The plausible explanation of this event is that Salmonella sp. may destruct liver cell by releasing endotoxin. The bacteria also may proliferate hepatocyte and stimulate the cell to release inflammatory cytokine.

The result of leukopenia in the patient was also reasonable as the measurement might be done in acute phase. Total white blood cell (WBC) also may value in normal or slightly elevated counts[10,11]. The assumption that leukopenia and lymphocytosis found in the patient were clues for diagnosing of TF seemed unreasonable and did not have theoretical basis as almost all infectious disease may present those WBC's results.

Moreover, Ramatillah, et al presented the Widal test with negative result. This test is widely used to help the clinician making a diagnosis of TF due to its simplicity and rapidity. However, Widal test does not perform a standardized measurement because of lack of sensitivity and specificity. Although it has been used for a century, Widal test reported in so many articles does not have a uniformed cut-off and it will be a problematic issue, leading to overdiagnosis of TF in endemic area[4,9]. The patient presented in case report should be proposed other laboratory tests, and for accuracy purpose, we recommend to do blood culture. In rare case of TF, Widal test will be able to result negative feature because it can perform in incorrect technique, unstandardized antigens, and antibiotics use prior doing the test[12,13].

Conclusion

In conclusion, case presentation entitled "Case report typhoid fever at PGI Cikini Hospital, Jakarta" by Ramatillah, et al. lacks evidence to diagnose the patient as typhoid fever and fail to give reasonable antimicrobial and symptomatic treatment for the patient. Although presented in systematic order, the case report does not describe patient with TF and with a premature consideration, the authors of case report also conclude there is no drugs-related problem.

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AUTHORS' CONTRIBUTIONS

Authors contributed equally to all aspects of the study.

PEER REVIEW

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CONFLICTS OF INTEREST

The authors declare that they have no competing interests.