

Identification of Non-Typhoidal Salmonella from Diarrheal Pediatric Patients in Surabaya, Indonesia

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IDENTIFICATION OF NON-TYPHOIDAL *SALMONELLA* FROM DIARRHEAL PEDIATRIC PATIENTS IN SURABAYA, INDONESIA

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Abstract. *Salmonella* Typhi and *Salmonella* Paratyphi are the predominant agents of diarrheal disease. However, non-typhoidal *Salmonella* (NTS) serovars are becoming increasingly global. Indonesia is endemic for typhoid fever, but data on NTS is limited. The study employed multiplex PCR (mPCR) to identify NTS in diarrheal children. Bacterial cultures grown on Salmonella Shigella agar from 80 fecal samples of diarrheal pediatric patients in Dr Soetomo General Hospital, Surabaya, Indonesia were characterized by mPCR as NTS Enteritidis, Infantis, Thompson, and Typhimurium. Confirmation by direct amplicon sequencing and by conventional biochemical and serological tests revealed only one NTS as Infantis and one isolate each of *S. Paratyphi* A, *S. Paratyphi* C and *S. Typhi*. The clinical manifestation of *S. Infantis* infection was milder than that of *S. Paratyphi* or *S. Typhi* infection. Thus confirmation tests should be conducted to confirm NTS identification by mPCR.

Keywords: non-typhoidal *Salmonella*, diarrhea, pediatric patient, Indonesia

INTRODUCTION

Diarrheal disease is an important public health problem in developing countries and a prominent cause of morbidity and mortality worldwide (WHO, 2016). Genus

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Salmonella, a member of family Enterobacteriaceae, remains one of the major contributors to acute enteric infections in Asia, especially *Salmonella* Typhi and *S. Paratyphi* (Ochiai *et al*, 2008). However, non-typhoidal *Salmonella* (NTS) serovars are becoming increasingly a threat to human health globally, responsible for an estimated 94 million cases of gastroenteritis each year and upwards of 150,000 deaths (Majowicz *et al*, 2010). Among NTS, *S. Enteritidis* and *S. Typhimurium* are epidemiologically the most predominant

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PAGE 1
