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### **Regarding Prognostic Factors in Typhoid Ileal Perforation: A Prospective Study of 53 Cases**

To the Editor:

I read with great curiosity the article "Prognostic Factors in Typhoid Ileal Perforation: A Prospective Study of 53 Cases" by Steven T. Edino in the September 2007 issue of *JNMA*.<sup>1</sup> The article was well written and the take-home message of mortality in typhoid perforation being significantly influenced by multiple perforations, severe peritoneal contamination and postoperative burst abdomen was well received.

I would like to emphasize a few points that add value to this discussion. My first point is the importance of discussing the pathogenesis of typhoid perforation. This is for the benefit of secondary readers who are unaware of the disease pathology. Enteric fever, also called typhoid fever, is a systemic febrile illness that is most commonly caused by *Salmonella typhi*. Infection is by either direct contact with an infected individual or indirect contact via contaminated food or water.<sup>2</sup> Ileal perforation is a late complication which occurs in the third week. This pathology is related to ileocecal lymphatic hyperplasia of the Peyer's patches, which may occur with secondary bacteremia and peritonitis.<sup>3</sup>

My second point is to emphasize additional established risk factors which significantly contribute

to the prognostic factors in typhoid ileal perforation. These risk factors are documented in the literature in the following two studies: First, in a study of 101 patients with typhoid intestinal perforation, of which the majority (78%) of the patients were in the low-socioeconomic strata in Indonesia. Secondly, features of typhoid fever were correlated with age and gender through a review of the charts of 552 hospitalized culture-positive patients with diarrhea in Bangladesh. Intestinal perforation occurred more frequently in patients  $\geq 11$  years of age (5–25%) than in younger age groups ( $P < 0.005$ ). This study reflects that the highest risks of complications and death were children from birth through 1 year of age and adults  $\geq 31$  years of age.<sup>5</sup>

It is established from your prospective study that typhoid intestinal perforation is a surgical problem with severe morbidity and high mortality in north central Nigeria.

In conclusion, I would like to point out the most significant prognostic factor is of late presentation of patients prolonging perforation-surgery interval, and the other complication and mortality indices are directly influenced by it. A study of 101 patients with typhoid intestinal perforation managed over a 10-year period resulted in a mortality rate of 13.9%, affecting mostly children and significantly worsened by a prolonged perforation-surgery interval  $> 72$  hours. The study also resulted in a morbidity rate of 65.3% and significantly affected more children than adults and associated with a perforation-surgery interval of 24–72 hours, hematochezia and multiple perforations.<sup>6</sup>

I believe with these points stated it would give the readers an

enhanced picture of the typhoid ileal perforation and its prognostic factors.

*Sincerely,*  
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#### **REFERENCES**

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