
Reply to Ulloa-Gutierrez

To the Editor—We thank Dr. Ulloa-Gutierrez [1] for his interest in our recent article about the association of Streptococcus pneumoniae serotypes with necrotizing pneumonia in children in Utah [2]. Ulloa-Gutierrez [1] addressed parameters other than S. pneumoniae serotype that may be predictors of severity. Specifically, an elevated lactate dehydrogenase (LDH) level appears to be associated with severe necrotizing pneumonia caused by serotype 3 in the Hospital Nacional de Niños de Costa Rica (San José) [1]. An elevated LDH level likely represents cellular damage to lung parenchyma, and it is reasonable to hypothesize that the degree of elevation correlates with the extent of necrosis. If S. pneumoniae serotype 3 causes more extensive necrosis, it stands to reason that LDH levels will be more elevated in patients with pneumonia caused by serotype 3.

At the suggestion of Ulloa-Gutierrez [1], we retrospectively evaluated the pleural fluid LDH levels in the 14 patients with serotype 3 pneumonia in our study. Five of the 14 patients had pleural fluid LDH levels measured. The median LDH level was 49,460 U/L (range, 39,700–118,041 U/L). These values represent a 40–120-fold increase over the upper limit of normal for serum LDH level in our laboratory (975 U/L). These findings appear to be consistent with those of Ulloa-Gutierrez [1]. However, care should be taken when comparing pleural fluid indices from retrospective studies because of the variability in time to presentation and other clinical and laboratory factors.

Complicated pneumonia in children is a growing problem worldwide. We agree with Ulloa-Gutierrez [1] that pleural fluid indices might prove to be a useful adjunct in predicting outcomes and directing management. In a separate study, we demonstrated that among children with empyema, those with pleural fluid indices including higher WBC counts, lower glucose values, and the presence of bacteria on Gram stain or culture were more likely to require surgical intervention than were those without these findings [3]. The degree of LDH elevation, however, was not associated with the need for surgical intervention.

Acknowledgments

Potential conflicts of interest. All authors no conflicts.

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References