

Hyponatremia in children with respiratory tract infection

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Sirs,

We read with great interest the article entitled “Hyponatremia in pediatric community-acquired pneumonia” by Don et al. in the latest issue of this journal [1], and we congratulate their elegant study.

They concluded that hyponatremia (HN) is common (present in 45.4% of children with community-acquired pneumonia) and seems to be associated with the severity, assessed by fever, need of hospitalization and serum nonspecific inflammatory markers.

We would like to add a comment based on our retrospective analysis. In 2004 we encountered serial patients with HN who had been admitted to our hospital because of respiratory tract infection (RTI). This experience prompted us to investigate the prevalence of HN in children with RTI: the medical records of 138 children with RTIs admitted in 2004 (mean age 2.2 years, range 0.1–11.6 years) were reviewed retrospectively. These children had been previously healthy and did not have any underlying illness which predisposed them to HN, such as renal, thyroidal, adrenal or hypophyseal insufficiency.

As shown in the table, there were 40 children (28.9%) with RTIs showing HN (serum sodium <136 mmol/L). There were no significant differences in age or duration of hospital stay between children with HN and those without HN: age 2.72 ± 2.55 years (mean \pm standard deviation) for the former and 2.03 ± 2.09 years for the latter; duration of hospital stay 7.00 ± 3.38 days (mean \pm standard deviation) for the former and 6.04 ± 3.82 days for the latter ($P > 0.05$ by unpaired Student's *t*-test). Furthermore, the 138 patients with RTIs were divided into three groups according to the site of inflammation, based on

the clinical and radiological findings (Table 1). Interestingly enough, the deeper the site of inflammation, the higher the prevalence of HN.

There have been several reports regarding HN in children with pneumonia [1–4], including the study by Don et al. In those studies the authors speculated that the mechanism of HN in pneumonia is due to the syndrome of inappropriate antidiuretic hormone (ADH) secretion and found that HN was associated with the severity in pneumonia. In addition, we here would like to suggest that the deeper the site of inflammation in the respiratory tract, the higher the prevalence of HN in children with RTIs.

Table 1 Prevalence of hyponatremia in children admitted with respiratory tract infections (Department of Pediatrics, Juntendo University Urayasu Hospital)

Main site of inflammation	Number of children with hyponatremia	Total number of subjects	Prevalence (%)
Pharyngitis or laryngitis	2	15	13.3
Bronchitis or bronchiolitis	14	61	22.9
Pneumonia	24	62	38.7
Total number	40	138	28.9

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