

or other birds die. Those who knew about H5N1 influenza told me that, without adequate compensation for culling flocks, little incentive would exist to report bird deaths. In a typical village, chickens, ducks, and pigs intermingled with each other and with humans underneath or around homes on stilts. General knowledge of infection control practices among villagers was minimal.

The dissemination of information into a rural, agricultural society such as that in the southeast of Cambodia is a difficult task. Many rural inhabitants do not have televisions or radios and may infrequently travel to larger towns. Health workers from international groups, nongovernmental organizations, and the government are often required to travel on foot or motorbike through fields and forests to reach and educate the population. Government health workers lack the personnel and resources to adequately identify and investigate potential cases, and Cambodia has substantially fewer microbiology laboratories than do neighboring Thailand and Vietnam.

Should a pandemic of avian influenza occur, it will almost certainly originate in Southeast Asia. Cambodian and international health organizations have recognized the country's potential key role in propagation of an impending pandemic agent. However, because of its history and current economic state, Cambodia is less able to respond to the avian influenza threat than its neighbors. In recognition of this fact, the World Health Organization and the Cambodian Ministry of Health have stated that the prevention, control, and identification of avian influenza are national priorities. Additionally, international funds have been flowing into Cambodia to assist with avian H5N1 influenza surveillance and case investigation. Much work remains to be done; we hope that by combining international resources and policy with domestic expertise and effort,

Cambodia will mount a successful response against this emerging threat.

Shaun K. Morris*

*University of Toronto, Toronto, Ontario, Canada

Address for correspondence: Shaun K. Morris, Department of Pediatrics, The Hospital for Sick Children, The University of Toronto, 555 University Ave, Toronto, Ontario M5G1X8, Canada; email: shaun.morris@utoronto.ca

Helicobacter pylori and Immuno-compromised Children

To the Editor: *Helicobacter pylori* has been classified as a carcinogenic pathogen. Its prevalence is high in developing countries. Apart from the known gastrointestinal pathologic changes caused by this organism, reports on the association between *H. pylori* infection and extragastrointestinal diseases have been increasing. Although impaired host immunity should be associated with a high prevalence of this infection, a definitive relationship has not been established. We conducted a cross-sectional study to determine the prevalence of *H. pylori* infection in immunocom-

promised Thai children.

The study was reviewed and approved by the research ethic committee of Chiang Mai University. From 2003 to 2004, a total of 60 children <18 years of age, who received corticosteroids, immunosuppressive drugs, or both, were enrolled consecutively into this study. Patients who had taken proton pump inhibitors and antimicrobial drugs 2 weeks before the study began were excluded. Stool specimens were collected and immediately stored at -20°C before analysis with the *H. pylori* stool antigen test (Meridian Bioscience Inc., Cincinnati, OH, USA). Although no study has validated this test in Thai children, most studies report its high sensitivity and specificity (>90%) (1).

The children enrolled in the study had a mean age of 7.9 years (range 0.5–16.6) and most were receiving both corticosteroids and chemotherapy (n = 36). Fourteen patients were being treated exclusively with corticosteroids, and 10 patients were receiving only chemotherapy. A total of 17.4% of the children <5 years of age had *H. pylori* infection, and the overall prevalence was 20%. Although we observed a relatively high prevalence of infection in patients with malignancy, particularly leukemia, the trend did not reach statistical significance (Table).

In contrast to previous studies that reported a low prevalence of infection with *H. pylori* in patients with AIDS (2) and leukemia (3), we demonstrated

Table. *Helicobacter pylori* stool antigen test results in immunocompromised children and primary diagnosis*

| Primary diagnosis | <i>H. pylori</i> stool antigen test | |
|-----------------------|-------------------------------------|--------------|
| | No. positive | No. negative |
| Malignancy | | |
| Leukemia | 8 | 21 |
| Lymphoma | 2 | 3 |
| Neuroblastoma | 0 | 7 |
| Retinoblastoma | 0 | 2 |
| Nonmalignancy | | |
| Nephrotic syndrome | 1 | 8 |
| SLE | 0 | 6 |
| Chronic renal failure | 1 | 1 |

*SLE, systemic lupus erythematosus.

that its prevalence in immunocompromised Thai children (20%) was higher than that previously reported in a healthy Thai population (17.5%) (4) and in those with recurrent abdominal pain (11.3%) (5). The prevalence in children <5 years of age was high compared with that reported from Perez-Perez et al. (17.4% vs. 5%) (4). Although unintentional eradication of *H. pylori* after multiple courses of antimicrobial drugs in such patients could explain the low prevalence in some studies, commonly prescribed antimicrobial drugs without antisecretory agents may be unable to cure the infection.

The major limitations of this preliminary study were the use of different diagnostic methods in the various studies and the lack of healthy controls. Thus, a well-designed case-control study is needed. However, the prevalence of infection with *H. pylori* in the immunocompromised children was high, and these patients appear to be more susceptible to this infection in early life.

Prakaimuk Nutpho*
and **Nuthapong Ukarapol***

*Chiang Mai University, Chiang Mai, Thailand

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Address for correspondence: Nuthapong Ukarapol, Department of Pediatrics, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand; fax: 66-53-946-461; email: nukarapo@chiangmai.ac.th

Community Case of Methicillin-resistant *Staphylococcus aureus* Infection

To the Editor: Community-associated methicillin-resistant *Staphylococcus aureus* (CA-MRSA) is an emerging infectious disease worldwide and is increasingly reported in Asia (1). We describe a community case of invasive MRSA infection, which appeared as bacteremia and pneumonia; CA-MRSA was initially suspected, and eventually the patient was treated successfully with ampicillin/sulbactam.

A 52-year-old man with chronic eczema was admitted to the Prince of Wales Hospital, Hong Kong, with fever and chills. Before admission, he had been treated for infected eczematous lesions for several weeks with oral ampicillin, cloxacillin, and cefazolin. He had no history of hospitalization in the past 10 years, and none of his family members were health-care workers. Examination showed an oral temperature of 40°C, blood pressure 95/55 mm Hg, and no audible murmur. Cellulitis in the left leg complicated his eczematous skin lesions. Chest radiograph showed right-middle-zone pneumonia. Neutrophilia

(leukocytes $15.5 \times 10^9/L$, neutrophils 86%), thrombocytopenia (platelets $55 \times 10^9/L$), prolonged activated partial thromboplastin time (43.6 s), and elevated bilirubin level (31 $\mu\text{mol/L}$) were observed. Two initial blood cultures grew gram-positive cocci in clusters, identified as *S. aureus* by positive results for catalase and slide/tube coagulase and a negative result for ornithine decarboxylase. Intravenous cloxacillin (2 g every 6 h) was given on days 2–5. Antimicrobial drug susceptibility testing was performed by the disk-diffusion method (1 μg oxacillin/disk, Mueller-Hinton agar, 2% NaCl), followed by MIC determination with the agar dilution method in accordance with NCCLS (former National Committee for Clinical Laboratory Standards, now Clinical and Laboratory Standards Institute) recommendations (2). One blood isolate was identified as methicillin-resistant *S. aureus* (MRSA), with an oxacillin MIC 4 $\mu\text{g/mL}$. The other isolate was identified as methicillin-sensitive *S. aureus* (MSSA), with an oxacillin MIC of 0.5 $\mu\text{g/mL}$. In view of a possible CA-MRSA infection (which could have been β -lactam-resistant), cloxacillin was substituted with intravenous vancomycin plus rifampin on day 5.

However, the patient's condition progressively deteriorated from day 2 to day 10 with persistent fever, chills, hypotension, and hemoptysis. A repeated chest radiograph showed small lung cavities with fluid, and a thoracic computed tomographic scan confirmed multiple lung abscesses. Results of an initial transthoracic echocardiograph were normal, but a subsequent transesophageal echocardiograph demonstrated tricuspid valve vegetation.

The MRSA isolate was susceptible to gentamicin, cotrimoxazole, erythromycin, ciprofloxacin, clindamycin, fusidic acid, tetracycline, chloramphenicol, vancomycin, and rifampin; a different pattern of multidrug-resistant