

# SEROPREVALENCE OF VARICELLA-ZOSTER ANTIBODIES IN A THAI POPULATION

Thanawadee Thantithaveewat<sup>1</sup>, Thananrat Thongmee<sup>2</sup>, Preeyaporn Vichaiwattana<sup>2</sup>, Nawarat Posuwan<sup>2</sup>, Penpayom Suntharn<sup>1</sup>, Pornsak Yoocharoen<sup>1</sup>, Piyanit Tharmaphornpilas<sup>1</sup> and Yong Poovorawan<sup>2</sup>

<sup>1</sup>Department of Disease Control, Ministry of Public Health, Nonthaburi;

<sup>2</sup>Center of Excellence in Clinical Virology, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand

**Abstract.** A stratified random sampling by age groups was conducted to determine seroprevalence of Varicella-Zoster virus (VZV) in a Thai population. In 2014, 2,218 serum specimens were collected from healthy people less than 60 years of age across four provinces from four regions of Thailand who attended pediatric and internal medicine units. Patients with chronic illness, undergoing immunosuppressive therapy or with clinical signs of infection with HIV or other immunodeficiency disorders were excluded. The overall seroprevalence of the sample population was 54.1%, with 27%, 50%, 89.6%, and 100% of those younger than 12, between 13 and 14, over 30, and over 50 years of age, respectively had anti-VZV antibodies. The proportion of VZV immunity increased rapidly in children from 5 to 9 years of age. The highest prevalence was among children attending kindergartens and primary schools. The findings were consistent with age groups reported in Thailand National Surveillance Database System. Because a significant proportion of teenage children currently susceptible to VZV could contract severe varicella and complications as adults, health-economic studies on cost-effectiveness and cost-benefit of VZV vaccine should be carried out to assist in decision making regarding introduction of such vaccines in Thailand.

**Keywords:** chickenpox, seroprevalence, seropositive rate, varicella antibody, Thailand

## INTRODUCTION

Varicella is a highly infectious and contagious disease of the respiratory tract (CDC, 2007; Bureau of General Communicable Diseases, 2014; Hamborsky *et al*, 2015). The majority of varicella

cases involves young children, especially kindergarteners (CDC, 2007; American Academic of Pediatrics and Pickering, 2009; Bureau of General Communicable Diseases, 2014; Hamborsky *et al*, 2015; Bureau of Epidemiology, 2015). Although varicella is usually a self-limiting viral illness, it remains latent in neural and intestinal ganglion, and can later become active as herpes zoster infection (CDC, 2007; Yawan *et al*, 2007; Hamborsky *et al*, 2015). Varicella disease in infants, adolescents, adults, and immunocompromised

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Correspondence: Professor Yong Poovorawan, Center of Excellence in Clinical Virology, Faculty of Medicine, Chulalongkorn University, Bangkok 10330, Thailand.  
E-mail: Yong.P@chula.ac.th









whereas in the current study it was the southern region, in agreement with the R506 surveillance report (Bureau of Epidemiology, 2005) indicating Narathiwat Province is among the top three southern provinces with highest incidences. Consequently, the result of this study used the specimens collected in 2014. Unfortunately, there were no data in the records of the history of chickenpox infection and varicella immunization.

In conclusion, the study shows nearly half of the Thai population have no immunity against varicella infection, and those at highest risk were infants and children below the age of 5 years. Vaccine is an important means of preventing and control of disease, although it is expensive. This study indicates that vaccination should be considered among those most susceptible, namely, infants and primary school children. However, further health-economics studies should be conducted to guide informed decision on any possible future varicella vaccine introduction.

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