

Topic: 20 Vaccination

Title: Findings from Pertussis Surveillance in a Tertiary Care Children Hospital in Thailand

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Text: **Introduction:** Pertussis incidence has been increasing over the recent years in adolescents, adults and young infants in many countries. Even though pertussis has been greatly reduced since the introduction of the Expanded Program of Immunization in Thailand, active surveillance has not been conducted. We performed surveillance in a tertiary care children hospital in Bangkok to evaluate pertussis incidence, its clinical features and burden.

Method: A prospective study was conducted at Queen Sirikit National Institute of Child Health, Bangkok, Thailand. We enrolled children age 0 - 18 years without apparent diagnosis i.e. asthma, tuberculosis or foreign body aspiration who had a cough for ≥ 7 days with at least one of the followings; paroxysm, inspiratory whooping, vomiting after cough. Nasopharyngeal swabs were collected and tested for pertussis using RT-PCR.

Results: From 1 March 2011 - 31 May 2012, 42 children age 1.4 months - 14.6 years were enrolled. Fifty percent were younger than 6 months. Seven children (16.7%) age 1.6 - 3.3 months had pertussis confirmed by RT-PCR. Among them, 3 were from the same district of Bangkok and all received either none or 1st dose of pertussis vaccine only. Six of 7 children (85.7%) with pertussis had household members coughing in the previous 2-6 weeks compared to 9/35 (25.7%) children with negative pertussis RT-PCR ($p=.005$). Presence of fever, paroxysmal coughs, whoop, vomiting after cough, subconjunctival hemorrhage, and apnea were not significantly different between children with and without pertussis while seizure (42.7% versus 2.9%, $p=.011$) and cyanosis (100% versus 11.4%, $p=.001$) significantly occurred among those with pertussis. The absolute lymphocyte count ranged from 8,659 - 48,398 (mean 22,762.9) cells/cu.mm³ in children with pertussis. Duration of cough ranged from 30 - 67 (mean 44.9) day: compared to 7 - 33 (mean 15.6) days in children with negative pertussis RT-PCR ($p=.001$). All pertussis patients required hospital admission, length of stay ranged from 3 - 14 (mean 8.4) day compared to 2 - 11 (mean 5.6) days in children with negative pertussis RT-PCR ($p=.03$). The medical cost of pertussis ranged from 83 - 662 (mean 392.9) USD.

Conclusion: In Thailand, pertussis can occur in young infants with prolong cough in those who have not received the vaccine at all or has received only the 1st dose of pertussis vaccine. Children with pertussis have significant coughing duration and longer hospital stay than children coughing from other causes.

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