

SEATO MEDICAL RESEARCH STUDY ON UPPER RESPIRATORY INFECTIONS

Coordinator: Howard E. Noyes, Ph.D. Chief, Department of Bacteriology and Mycology

Principal Investigators: Udom Lecomboon, M.D.
Howard E. Noyes, Ph.D.
Lloyd C. Olson, MAJ, MC

Associate Investigators: Chiraphun Duangmani, M.D.
Vichai Kusalsai, M.D.
Pethai Mansuvan, M.D.
Pramuan Sunakorn, M.D.

Assistant Investigators: Yupin Charoenvit, B.S.
Yachai Choomrasi, B.S.
Thomas L. Hensarling SFC
Pavane Prayongrat, R.N.
Yongyuth Reangpradub, B.S.

Period of Report: 15 January 1968—31 March 1968

STUDY REPORT

1. Title: Evaluation of antimicrobial prophylaxis in children with upper respiratory infections

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Objectives Outpatients at Children's Hospital, Bangkok, Thailand are often treated with antibiotics on the basis of clinical findings alone. The value of this procedure has never been determined. The objectives of this study are to evaluate the efficacy of antimicrobials now in use for prophylaxis of upper respiratory tract infections in children and to determine the effects of these antimicrobials on the flora of the upper respiratory tract.

Description Patients in this study are restricted to children with upper respiratory infections (URI) and are from 6 months to 12 years of age. Criteria for selection are a fever of not less than 37 C, cough, nasal discharge and injected throat. Patients are examined by a physician on the initial visit and by the same physician at 2 day intervals for 7 days. Laboratory procedures include a complete blood examination on the first visit and cultures of nasopharyngeal swabs for bacterial and virus isolations on all visits.

Therapy is decided on the basis of drawing one of three colored chips from a box. The control group receives placebo, one therapy group receives oral penicillin in a dosage 50,000 units/kg/day for 7 days and the other therapy group receive oral tetracycline in a dosage of 40 mg/kg/day for 7 days. All patients receive symptomatic and supportive therapy. Treatment is prescribed as syrup A, B or C and the contents of the syrups are known only to personnel of the pharmaceutical department of Children's Hospital, Bangkok, Thailand.

Responses to treatment are interpreted as improved, not improved or complicated as follows:

Improved: patients are free from any signs and symptoms of URI or free from fever with other signs and symptoms of URI decreasing at the end of 7th day.

Not improved: patients still have fever with or without the increasing signs and symptoms of URI at the end of 7th day or patients develop signs and symptoms of viral lower respiratory tract infection.

Complicated: is defined as the development of symptoms and signs of bacterial lower respiratory tract infections or infections of other systems with suggestive evidences of bacterial infection.

Progress The effects of antimicrobial administration cannot be evaluated now because the formulations of the syrups will not be known until the completion of the study. Diagnoses of the first 105 patients included 91 with URI, 12 with exanthematous fever, 1 with mumps and 1 suspected of whooping cough. Cooperation of the children's parents was excellent in that more than 80% of the patients were examined at 2 day intervals for at least 3 visits. Most patients were six years or less and about 55% were females.

Virus isolates are shown in Table 1 and bacterial isolates are shown in Table 2. Attempts to relate these to each other, clinical symptoms and response to antimicrobials will await completion of the study.

Summary A study was initiated to evaluate antimicrobial prophylaxis in children with upper respiratory diseases. Bacterial pathogens isolated most frequently were Diplococcus pneumoniae, coagulase positive Staphylococcus aureus and Haemophilus influenzae. Viruses isolated most frequently were cytomegalovirus and enterovirus. Evaluation of antimicrobial prophylaxis must await completion of the study when the formulations of the treatment regimens are disclosed.

Table 1. Viral Isolates from 105 Patients in URI Prophylaxis Study

Virus Isolated	No. of Patients
Enterovirus	10
Adenovirus	4
Myxovirus	5
Rubella virus	6
Cytomegalovirus	21

Table 2. Bacterial Pathogens Isolated from 105 Patients in URI Prophylaxis Study

Bacteria Isolated	Number of Patients
Diplococcus pneumoniae only	22
Haemophilus influenzae only	11
Staphylococcus aureus (coagulase positive)	12
Diplococcus pneumoniae and Staphylococcus aureus	10
Diplococcus pneumoniae and Haemophilus influenzae	6
Haemophilus influenzae and Staphylococcus aureus	5
Haemophilus influenzae and Group A streptococcus	1
Diplococcus pneumoniae, Haemophilus influenzae and Staphylococcus aureus	1
Total	68