Longitudinal Surveillance of Respiratory Viruses in Bangkok

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OBJECTIVE: To determine over an extended period of time which viruses are associated with respiratory illnesses in children in Bangkok.

DESCRIPTION: During the period January 1968—April 1969, 476 children with respiratory illnesses were studied for nasopharyngeal microorganisms. Paired sera were collected during acute and convalescent phase of illness and tested for a variety of antibodies to known respiratory viruses. A general summary of viruses isolated and significance of the high frequency of cytomegalovirus was reported in the Annual Report of April 1969.

PROGRESS: Virus isolation and identification and serological testing has been completed on all patients. Four hundred and three (403) of the 476 patients studied suffered from clinically uncomplicated febrile upper respiratory illnesses. Thirty—nine also showed exanthems (13 clincally consistent with rubella, 8 with rubeola and 18 "non—specific"), 19 had associated diarrhea, 8 bronchitis, 2 pneumonitis, 3 herpangina, and one, pertussis.

Viruses isolated and serological results are shown in Table 1. Not considering cytomegalovirus, a potential etiologic agent was identified in 38% of the cases. The most common infectious agents identified were the parainfluenza viruses (15.5%) followed by approximately 5% each with adenoviruses, respiratory syncytial and influenza A2 viruses.

By calculating the age—specific incidence of antibody, some appreciation of the transmissibility of various respiratory agents in the local population can be gained. Table 2 outlines such data for six agents. In general these data agree with that found in temperate zone countries.

Analysis of clinical data showed no correlation of peripheral white blood cell counts with nasopharyngeal flora (bacterial and/or viral), nor was there any correlation between recovery of a given virus and the presence of a certain species of bacteria.

SUMMARY: Parainfluenza viruses were found to be the respiratory viruses most commonly associated with febrile upper respiratory tract infection in Bangkok children, accounting for approximately 15% of infections. Adenoviruses, respiratory, syncytial and rhinoviruses each account for 5% of infections. Age—specific antibody incidence suggest most respiratory viruses circulate through local populations in a manner similar to that found in temperate zone countries.

PUBLICATIONS: Olson, L.C., Keutsinha, R., Mansuwan, P. and Snitbhan, R. Respiratory excretion of cytomegalovirus in Thai children. Jour. Ped (in press).

Table 1. Summary of virus isolation and serological results by month of study.

		Viruses Isolated								Additional Pasitives by Serology				
Month	No.	Cmv	Aden	Pflu	Rhino	Rub	Cox.B	Flu	Misc*	Ad	RS	HS	Pfl	Flu
Jan	27	6		2		4	2			Sera				
Feb	52	10	2			2	5			Not				
Mar	57	9	7	4					2	Available				
Apr	22	6	1	2					1					
May	29	3		6			1		2	2	2		2	
June	49	10	3	15					1	1	5		2	1
July	45	11	2	5	5		1			1	8	1	7	
Aug	23	1		1	1			1			9	1		7
Sep	35	3		1				8					1	9
Oct	14	1						7						
Nov	23	3		6				1						3
Dec	28	2		1					1	1		1		1
Jan	31			7	2		2			1			2	
Feb	25	1		2						1			1	
Mar	17	2		6									1	
	476	68	15	58	8	6	11	17	7	7	24	3	16	21

* Includes two herpes simplex, and one each polio 2, echo 18, RS, reovirus 1, and rubeola

Table does not include ten instances of dual infection, and 4 serologically proven measles.

Adenoviruses isolated: type 1 (1); type 2 (3); type 3 (6); type 5 (4) and type 11 (1). Parainfluenza viruses. type 1 (22); type 2 (11); and type 3 (25).

Table 2. Age—specific incidence of antibody.

Age	No.	% with antibody to: H.S.	R.S.	Adeno	Pflu—1	Pflu—2	Pflu—3
<1	59	4	17	31	34	3	29
1	78	23	21	49	37	10	23
2	55	20	42	61	49	31	49
3	38	26	47	57	41	34	60
4	35	40	58	70	63	46	74
5	17	52	39	64	65	30	82
6—10	43	84	30	61	75	35	73