



PERTUSSIS 2001 AND PERTUSSIS PROPHYLAXIS

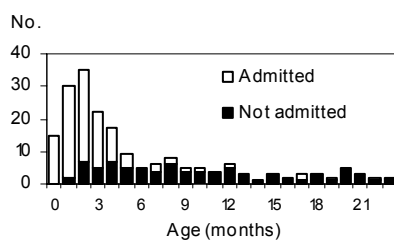
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Pertussis is notifiable in children aged < 2 years, when the case has clinical whooping cough and is laboratory-confirmed. In 2001, there were 196 notifications in children: 95 males and 101 females. This is marginally higher than in 1999 and 2000, with 166 and 178 cases respectively, EPI-NEWS 40/00 and 3/02. A reminder issued for 66% of the notifications was necessary. A total of 80 children (41%) were aged < 3 months, 119 children (61%) were < 5 months and 161 children (82%) were < 1 year. Between three and 38 cases per month were notified, most of them in the second half-year. The total annual incidence for children < 2 years was 146 per 10⁵. Most of the notified cases (72%) were confirmed by PCR alone, while 28% were confirmed by culture +/- PCR.

Admission and sequelae

Over half of the children (113) were admitted to hospital due to pertussis. Of these, 71 (63%) were < 3 months, 98 (87%) were < 5 months and 108 (96%) were < 1 year, [fig. 1](#). Sequelae following pertussis infection were not reported.

Fig. 1. Notified cases of pertussis in children aged < 2 years, by age in months and hospital admission, 2001



Vaccination status

Vaccination status and, where appropriate, hospital admission of notified children is shown in [table 1](#). Vaccination effectiveness of the acellular pertussis vaccine has previously been reported as high for 1998 and 1999, EPI-NEWS 40/00. For 2000 and 2001, vaccination effectiveness is similarly estimated to be 0.92 for children aged 6-11 months (who may have received up to two vaccinations) and 0.91 for children aged 12-23 months (who may have received up to three vaccinations). The lower 95% confidence limits are 0.85 and 0.83, respectively. Thus, the pertussis vaccine is still highly protective up to the age of 2 years.

Source of infection

The source of infection was un-

Table 1. Notified cases of pertussis in children < 2 years, by vaccination status and hospital admission, 2001

Times vaccinated	Total No.	Admitted	
		No.	%
0	101	82	81
1	40	25	63
2	34	4	12
3	20	2	10
Unknown	1	0	0
Total	196	113	58

known for 54% of the notified children. Of the remaining children, siblings made up 29%, other family members 5%, infection in day-care centres 4%, playmate or other known contacts 7%, while pertussis in the town/surrounding area constituted 2% of stated sources of infection. One child was thought to have been infected in hospital.

Comments

About two-thirds of pertussis notifications were of unprotected children. Most of them were < 6 months of age, unvaccinated, and the source of infection was typically an older sibling. However, even in children < 2 years of age, full pertussis vaccination does not always prevent pertussis. The current pertussis situation is described in EPI-NEWS 44/02.

PERTUSSIS PROPHYLAXIS Exposure

Assessment of the degree of exposure is important before deciding to commence prophylactic treatment with antibiotics. A strong degree of exposure occurs in:

- close contact (face to face),
- direct contact with airways secretions,
- sharing the same room as a symptomatic patient for at least one hour.

Under these circumstances, the risk of transmission to an unprotected person is approximately 80-90%. If the exposure has been less intense, an assessment of the need for prophylactic treatment of the exposed person and possibly of household contacts must be made on the basis of specific circumstances and factors, particularly vulnerability of the exposed person. Macrolide antibiotics are recommended for both treatment and prophylaxis. The risk of infection is considered minimal after five days' treatment.

Prophylaxis

Prophylactic antibiotic treatment is

initiated to protect children aged < 2 years against pertussis. The younger the child, the higher is the risk of serious infection and hence the stronger the indication for prophylaxis. Vaccination does not confer significant protection until a second vaccination has been given. Prophylactic treatment after relevant exposure should thus be considered, after swabs have been taken, in:

- all children aged < 6 months, irrespective of symptoms.

- unprotected children aged 6-24 months (with no or only one vaccination), irrespective of symptoms.

Negative swab result should not lead to cessation of treatment.

If an unprotected child aged < 2 years is indirectly exposed, e.g. via an older sibling attending a day-care centre with cases of pertussis, the degree of the primary exposure and the older sibling's protection status should be assessed when considering prophylaxis. If the older sibling is symptomatic (including common cold symptoms) both should be swabbed and treated. If pertussis is confirmed in at least one of them, the whole household should be treated to break the transmission of pertussis in the family. On suspicion of pertussis, specimens should be taken for PCR examination from siblings and other household contacts with unprotected children aged < 2 years, even when exposure is unknown. If pertussis is confirmed in at least one of them, the whole household should be treated.

Vaccinated children aged 6-24 months (with at least two vaccinations) are still susceptible to pertussis, and confirmation of pertussis in this group should therefore indicate treatment.

Pregnant women in whom pertussis is detected just prior to delivery should be treated immediately. Treatment of the whole household should also be considered. If the child is born within five days after treatment is commenced, the neonate should also be treated.

The National Board of Health's guidelines for pertussis in child-care institutions

Unprotected children < 1 year old (0-1 vaccination) in child-care institutions with cases of pertussis should be sent home for as long as there is a risk of infection.

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Serum specimens positive for *Mycoplasma pneumoniae* by complement fixation test

3rd quarter of 2002 compared with 3rd quarter of 2001 and, average for 3rd quarter 1997-2001

	July	August	September
Positive specimens during 3rd quarter of 2002	25	52	70
Positive specimens during 3rd quarter of 2001	21	34	32
Positive specimens, average 3rd quarter, 1997-2001	36	51	77

(Dept. of Respiratory Infections, Meningitis and STIs)

Patients with laboratory-diagnosed RSV and rotavirus infections

3rd quarter of 2002 compared with 3rd quarter of 2001

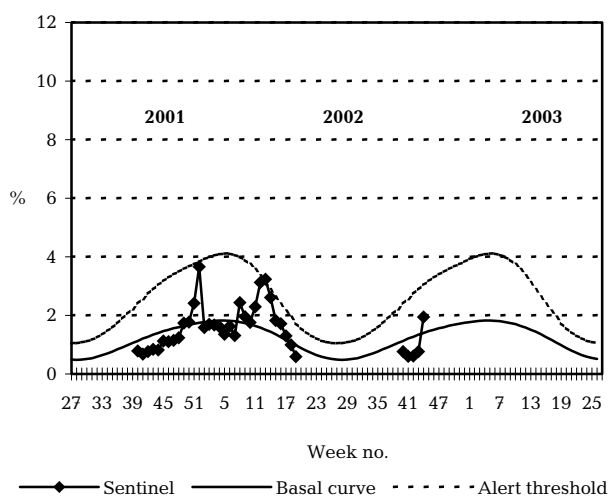
	RSV		Rota	
	2002	2001	2002	2001
July	3	0	6	15
August	1	0	7	9
September	2	4	5	7
Total	6	4	18	31

Reported from the following Clinical Microbiology departments:

Aalborg Hospital (South), Aarhus Municipal Hospital, Herning Central Hospital, Hvidovre Hospital, Odense University Hospital, Slagelse Central Hospital, Viborg Hospital, Dept. of Virology, Statens Serum Institut.

Sentinel surveillance of influenza activity

Weekly percentage of consultations, 2001/2002/2003



Sentinel: Influenza consultations as percentage of total consultations

Basal curve: Expected frequency of influenza consultations under non-epidemic conditions

Alert threshold: Possible incipient epidemic

(Dept. of Epidemiology)