

What predicts persistence of wheeze in children aged one year?

Five-year follow-up of the Leicestershire 1998 cohort



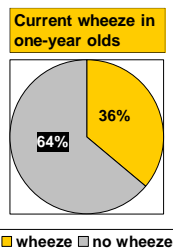
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Background

In Leicester, UK, 36% of one-year olds have wheezed in the past 12 months. Many of these have transient disease. Parents (& doctors) want to know in advance what is going to happen to these infants & who is going to develop persistent severe disease. Cohort studies allow to investigate this.

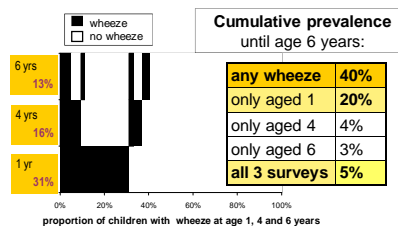


1) How many children wheeze in their first 6 yrs of life? (Cumulative prevalence)

Figure 3 shows:

Horizontally, prevalence of wheeze (in black), for all 3 surveys (98, 2001, 2003).

Vertically, the fate of each child can be followed from 1998 through 2003.



3) What predicts persistence of wheeze?

Multivariable logistic regression, comparing persistent wheezers (wheezing at age 1, 4 and 6, N=84) with transient wheezers (wheezing only at age 1, N=322).

Predictors (at age 1) of persistent wheeze:

	OR	95% CI	p
South Asian ethnicity	0.91	(0.55-1.80)	0.99
Sex (male vs female)	1	(0.24-3.42)	0.89
Short of breath* occasionally	1.92	(0.98-3.78)	
always	3.64	(1.28-10.3)	0.01
Disturbed sleep* rarely	1.36	(0.65-2.86)	
often	3.52	(1.62-7.63)	<0.01
Wheeze with exertion	2.57	(1.37-4.82)	<0.01
Maternal asthma	2.8	(1.54-5.05)	<0.01
Chronic rhinitis	0.5	(0.26-0.95)	0.03

* due to wheeze

Questions

1. In total, how many children wheeze at any time during their first 6 years of life?
2. What is the prognosis of current wheeze in a 1-year-old?
3. What predicts persistence of wheeze?

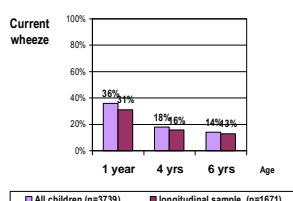
Methods – Leicestershire cohort

In 1998, we sent a questionnaire on respiratory symptoms to a random population sample of 4300 parents of one-year old children.

Follow-up surveys were 3 and 5 years later (2001, 2003). 87% replied at least once, 39% all 3 times.

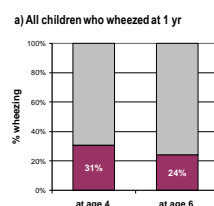
Age (yr of survey)	1 year (1998)	4 yrs (2001)	6 yrs (2003)
N (response rate)	3413 (79%)	2633 (61%)	2100 (49%)
Any reply	3739 (87%)		
3 replies	1678 (39%)		

Prevalence in children who answered all surveys was comparable to the whole group.



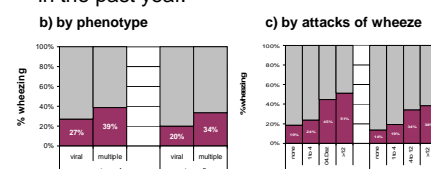
2) What is the prognosis of current wheeze in a 1-year-old?

- a) Only 31% of children wheezing at age 1 still do so at age 4, and only 24% at age 6.



Prognosis is better in:

- b) viral wheezers (wheezing only with respiratory infections) compared to children reporting wheeze triggered by multiple factors
- c) children reporting infrequent attacks compared to those reporting many episodes in the past year.



Take home message:

Wheezing in 1-year olds

1. Nearly every second child (40% of all children) has at least one episode of wheeze between age 1 and 6 years, but only 5% have persistent wheeze with problems at each survey.
2. Prognosis of wheezing in a one-year old is good: only 1/3 continue to wheeze at age 4 yrs, and 1/4 at age 6 yrs.
3. Persistence is predicted by frequent and severe wheeze (sleep disturbance, shortness of breath), wheeze upon exertion (laughing, crying), and maternal asthma.

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