Are nappy sterilisers associated with SIDS?

A W Stewart, E A Mitchell, and other members of the New Zealand Cot Death Study Group*

Abstract

Chemicals used to clean nappies have been suggested as a cause of sudden infant death syndrome (SIDS). Parents of 393 cases and 1592 controls were questioned about nappy cleaning procedures. Soaking in sterilisers followed by rinsing in water had a relative risk of 0.91 compared with other cleaning procedures. Nappy cleaning methods are not related to SIDS.

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There has recently been considerable discussion whether deaths from sudden infant death syndrome (SIDS or cot death) could have been caused by exposure to chemicals, in particular antimony.¹ Chemicals used to clean babies' nappies have also been suggested to cause SIDS,² but there have been no published studies that have confirmed or refuted an association between nappy sterilisers and SIDS.

Methods

The New Zealand Cot Death Study has been described in detail previously.^{3,4} In brief, it was a large, three year (1 November 1987 to 31 October 1990), nationwide case-control study. There were 716 postneonatal deaths of which 485 were classified as SIDS.

The cases were compared with 1800 control infants who were randomly selected from all births in the study regions. Control infants were randomly allocated a nominated date to ensure group matching for infant age.

Obstetric records were examined (1762 controls and 465 cases) and parents (or guardians) interviewed (1592 controls and 393 cases). Questions about type of nappy used and how they were washed were included in the questionnaire. The specific questions were:

(1) Over the last two weeks what type of

nappy did the baby usually wear? (No nappies, disposable, cotton, towelling, other.)

(2) Did you usually soak the nappies before washing? If yes, was this in water only or other soak, steriliser, or prewash?

(3) What did you usually wash the nappies with? (Soaked only, or soaked and rinsed; soap; washing powder or detergent.)

Results

Disposable nappies were usually worn by 60 (15%) of the cases and 216 (14%) of the controls. These infants will not be considered any further.

Of those not using disposable nappies the most common prewash procedure in the controls was to soak the nappies in a steriliser (73%). The relative risk for steriliser use was 0.62 with 95% confidence interval (0.48 to 0.81) compared with not using a steriliser soak. The relative risk of using a steriliser soak having controlled for possible confounders (age of infant, region, season, nominated time, maternal marital status, occupation, age, smoking, age of leaving school, number of previous pregnancies, age at first pregnancy, attendance at antenatal clinics and classes, infant's sex, ethnicity, birth weight, gestational age, admittance to neonatal unit, sleep position, bed sharing, and breast feeding) was 1.06 (0.76 to 1.48).

There were three washing routines: (1) soak and rinse (38% of controls), (2) detergents (37%), and (3) soap (23%). The relative risk for detergent use was 1.57 (1.22 to 2.02) compared with not washing with detergents but after adjustment was 1.03 (0.75 to 1.40).

The various combinations of soaking and washing procedures are shown in the table. The use of sterilisers followed by a water rinse shows the lowest univariate relative risk. When compared with all other procedures it has a relative risk of 0.59 (0.44 to 0.78) but after controlling for possible confounders the relative risk is 0.91 (0.65 to 1.30).

Discussion

In New Zealand, disposable nappy use is relatively uncommon and the use of nappy sterilisers common. New Zealand had a high postneonatal and SIDS mortality rate.⁵ This raised the possibility that the two were related.

We found steriliser use was associated with a lower risk of SIDS. Sterilisers are relatively expensive and after adjustment, which included controlling for socioeconomic effects, there was no beneficial or detrimental effect.

University of
Auckland, Department
of Community Health
A W Stewart

Department of
Paediatrics
E A Mitchell

Correspondence to:
Mr A W Stewart,
Biostatistics Unit,
Department of Community
Health, University of
Auckland, Private Bag
92019, Auckland, New
Zealand.

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*Members of the study
group: E M Allen, D M O
Becroft, R P K Ford,
I B Hassall, A P Roberts,
R Scragg, B J Taylor.

The numbers, univariate and multivariate odds ratios (95% confidence interval) for all combinations of soaking and washing of nappies

	Case	Control	Odds ratio	
			Univariate	Multivariate
No soaking/soap wash	19	51	2.24 (1.21 to 4.13)	1.99 (0.97 to 4.06)
No soaking/detergent wash	38	91	2.52 (1.57 to 4.01)	1.15 (0.64 to 2.05)
Water soak/rinse only	6	10	3.61 (1.13 to 11.2)	2.26 (0.61 to 8.42)
Water soak/soap wash	18	97	1.12 (0.62 to 2.00)	0.70 (0.35 to 1.40)
Water soak/detergent wash	38	114	2.01 (1.27 to 3.17)	1.00 (0.57 to 1.78)
Steriliser soak/rinse only	83	500	1.00	1.00
Steriliser soak/soap wash	41	193	1.28 (0.83 to 1.96)	1.16 (0.70 to 1.92)
Steriliser soak/detergent wash	80	304	1.59 (1.11 to 2.26)	1.04 (0.68 to 1.58)
	323	1360		

The speculation that steriliser use is a cause of SIDS is not upheld and the possibility that it is a major risk factor is refuted.

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