Breast-feeding in Geneva: Prevalence, duration and determinants

Summary

A telephone survey was carried out with the objective of measuring the prevalence, duration and determinants of breast-feeding in the canton of Geneva, between August and December 1993. The participants were 278 out of 320 families with a telephone number in Geneva, from a random sample of families in which a child had been born in Geneva in the preceding 15 months. Prevalence of breast-feeding at 1 day of life was 93.3%, at 3 months 62.5%, at 4 months 51.1%, at 6 months 28.1%; median duration was 4.2 months. For complete (exclusive or predominant) breast-feeding, results were: 1 day 87.3%, 3 months 37.5%, 4 months 19.4%, 6 months 3.8%; median duration 2.4 months. Initial prevalence of breast-feeding was significantly higher in girls (97.2%) than in boys (89.4%; \( p < 0.01 \)). Duration of breast-feeding was shorter in children of women who smoked (\( p < 0.001 \)). Relative risks for no breast-feeding at 4 months were 1.53 (95% confidence limits 1.20–1.96) for less than 15 cigarettes per day during pregnancy, and 3.65 (2.19–6.09) for 15 cigarettes or more. Duration of breast-feeding was shorter if the mother worked as an employee. Prevalence and duration were higher if the mother was originally from Africa, Asia, Middle-East or Latin American countries. Although the initial prevalence of breast-feeding was relatively high, only half of children were breast-fed at 4 months. Promotive efforts are needed to increase the duration of breast-feeding, in particular by legislation on maternal protection. Further studies are required to clarify gender differences in breast-feeding.

Breast milk is the ideal food for babies. Until the age of 4 to 6 months, it perfectly meets their nutritional needs. Unlike artificial feeding, it brings important elements of protection, minimising infectious risks, and offers the best conditions for reinforcing the mother-child links. Furthermore, breast-feeding decreases the risks for the mother for some health problems. Some epidemiological studies suggest breast-feeding has a protective effect against the sudden infant death syndrome (SIDS), but this relationship may be in part due to the confounding effect of other factors, in particular cigarette smoking.

Although breast-feeding is the most natural mode of feeding babies, attempts to find alternatives have been made since the beginning of time. When the first adapted milks appeared at the end of the 19th century, the frequency and duration of breast-feeding began to decrease in the industrialised countries. This trend began to reverse in the 1970s, in the USA, in Australia, then in Europe. Since then, thanks to an increased awareness of the importance of breast-feeding for child survival and health, efforts have been made to promote breast-feeding in many industrialised countries. Although these efforts have led to an increase in the prevalence of breast-feeding, it remains low in some European countries. For instance, the proportion of breast-fed infants in the first day of life was only 65% in Great-Britain in 1990, and 36% in Scotland.

In Switzerland, following WHO guidelines, it is recommended that all infants be completely breast-fed during the first 4 months, and that breast-feeding should continue as long as possible. Unfortunately, data on the prevalence of breast-feeding are rare in this coun-
try\textsuperscript{11-13}. This lack of data gives little credibility to the promotion of breast-feeding, and makes its evaluation impossible. The objectives of this study were to measure the prevalence of breast-feeding in the infant population of Geneva, together with other risk factors for the sudden infant death syndrome, such as prone sleeping position and tobacco smoking by parents. Results concerning these behaviours are presented elsewhere\textsuperscript{14}.

Methods

Population and procedures
A telephone survey was carried out in 1993 on a random sample of 550 families in which a child had been born in the preceding 12 months in the canton of Geneva. The list of families was drawn up in August 1993, and the families were interviewed between August and December 1993. As the list only included the child's and parents' names and address, telephone numbers were obtained from printed and computer directories. 320 families had a telephone number in Geneva, and constituted the study population (only about 1% of families living in Geneva have no telephone). Most other families with a child born in Geneva were probably living in other cantons or in neighbouring areas of France. Collected data included the parents' profession, country of origin and tobacco use during and after pregnancy, and the baby's birthweight, sex, and usual sleeping position. Two sets of questions dealt with the infant's feeding: firstly, feeding during the first four weeks of life; any food received, the main food, and the recommendations given at the maternity ward. Secondly, the duration of breast-feeding, and that of predominant breast-feeding.

The study protocol was approved by the Ethics Committee for research in epidemiology and public health in the Faculty of Medicine.

Definition of variables

Following WHO recommendations\textsuperscript{15,16}, we used the following definitions: breast milk (BM) includes milk expressed or from a wet nurse. Exclusive breast-feeding: only BM, with nothing else than drops or syrups with vitamins, minerals or medicines. Predominant breast-feeding: BM is the predominant source of nourishment, and the child receives some water, water-based drinks, juices or oral rehydration salts. Complementary feeding: BM together with any other food or liquid. Bottle-feeding: any liquid or semi-solid from a bottle. Complete breast-feeding includes exclusive and predominant breast-feeding. Breast feeding (any mode) includes complete and complementary breast-feeding.

Mothers' professional activities were classified in four socio-professional classes\textsuperscript{17}: I. Professional, administrative. II. Clerical and skilled manual. III. Unskilled workers. IV. No paid occupation.

Statistical analyses

Prevalence estimates of breast-feeding modes at different ages were computed by survival analyses using the product-limit method of Kaplan-Meier, applied to the retrospective data on the duration of breast-feeding. 95% confidence limits for these rates, median duration and percentiles were derived using the same methods, after smoothing the data with moving averages according to WHO recommendations\textsuperscript{18}. The proportional hazards model of Cox was used for the study of the determinants of breast-feeding\textsuperscript{18}. Statistical significance of the effects was based on the likelihood ratio statistic. The analyses were carried out with the SAS/STAT 6.10\textsuperscript{19} and Egret\textsuperscript{20} software.

Results

Population

Out of 320 families with telephone in Geneva, 278 (87%) participated in the study; 24 (7.5%) refused to participate; other reasons for non-participation were either the inability to understand French, German, Spanish, Italian or English language (n = 5), or no answer to repeated telephone calls (n = 12). One questionnaire was excluded because the child's age was higher than 18 months. The 278 participants included 6 pairs of twins. Infants ages ranged from 0.3 to 15.5 months, with a mean age of 8.43 (+/-3.66) months. Age distributions were similar in both sexes.

Foods in the first weeks

91.9% of the infants had received breast milk during their first four weeks of life, either exclusively, or with other foods (Table 1). Around 16% received an adapted formula or a special milk (such as hypo-allergenic milks). One infant had received soya milk. For 85.6%, breast milk had been the principal food during this time period. 45% of the mothers declared they had received no recommendations about feeding the child in the maternity ward.

Duration of breast-feeding

Figure 1 shows the plots of the probability of being breast-fed and of complete breast-feeding as functions of the child's age. More than 93% of infants had been breast-fed at least once, and 87.3% had been breast-fed completely during their first day of life (Table 2). The median duration was 4.2 months for breast-feeding, and 2.4 months for complete breast-feeding. At the