

INFANTS AND PRESCHOOL CHILDREN

A REFERENCE CURVE FOR RELATIVE WEIGHT LOSS FOR BREAST-FED INFANTS TO DETECT HYPERNATRAEMIC DEHYDRATION (12)

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INTRODUCTION: To construct a reference growth chart for breast-fed infants between postnatal day 2 and 11 and to assess its validity in detecting infants with hypernatraemic dehydration. The participants are 1,544 healthy (exclusively) breast-fed infants with 3,075 measurements born during 2002 in three primary care midwife practices in the Netherlands and 83 cases of breast-fed infants with hypernatraemic dehydration obtained by a search of the literature.

METHODS: Outcome measure was relative weight loss (weight loss compared to birth weight in %). A reference chart for relative weight loss was obtained by the LMS method, in which centiles are estimated by the Box-Cox power (L-curve), the median (M-curve) and the coefficient of variation (S-curve).

RESULTS: The 0.6 centile (= -2.5 SDS) is -11.1% (2 days), -11.9% (3 days), -11.8% (4 days), -11.3% (5 days), -11.0% (6 days), -10.6% (7 days), -10.2% (8 days), -9.8% (9 days), -9.6% (10 days) and -9.5% (11 days). This centile is used as a test to detect children at risk of hypernatraemic dehydration. The test is considered positive if a breast-fed child's relative weight loss decreases below -2.5 SDS and negative if it stays above. Sensitivity (percentage of infants with hypernatraemic dehydration with a positive test) is 86%. Specificity is by definition 99.4%. Positive predictive value is 9.3%, assuming a prevalence of 7.1 per 10,000 breast-fed infants. Cases with a negative test have a mean plasma sodium concentration of 153 mmol/l and cases with a positive test have a mean sodium concentration of 163 mmol/l.

CONCLUSIONS: A growth chart for relative weight loss for breast-fed infants in the first days after birth can be helpful to detect infants at risk of hypernatraemic dehydration.

Key words: breast feeding, growth, hypernatraemic dehydration, sensitivity, specificity

POST-NEONATAL ULTRASOUND SCREENING FOR DEVELOPMENTAL DYSPLASIA OF THE HIP (88)

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INTRODUCTION: In the Netherlands, screening for developmental dysplasia of the hip (DDH) is part of the program for child health surveillance, organized by the Child Health Care (CHC). The CHC-screening is based on identification of risk factors and repeated physical examination of the hip in children aged one to five months. As the validity of this screening program was not satisfactory, we studied whether post-neonatal ultrasound (US) screening yields better results.

SUBJECTS: Infants attending the CHC-centers.

METHODS: The intervention group (n=5170) was screened by US at the age of one, two and three months, the control group (n=2066) by routine physical examinations. Both the children in the intervention and control group received an US examination after the age of six months to detect any abnormality that might have been missed by the screening. Using a decision-tree analysis, the effectiveness of several US screening strategies was evaluated.

RESULTS: In the cohort study, the sensitivity of the US-screening was 88.5%, the referral rate 7.6%. As a result of the US-screening 4.6% of the children were treated. The sensitivity of the CHC-screening was 76.4%, with a referral rate of 19.2%. The treatment rate was 2.7%. Of the treated children in the US-screening group, 67% were referred before the age of 13 weeks, whereas in the CHC-screening group only 29% were referred before this age.

The decision-tree analysis showed that of the general US-screening strategies, screening at the age of three months had the lowest percentage of missed cases (0.6%), the lowest referral rate (4.5%) and the lowest treatment rate (3.2%). Screening of high-risk infants resulted in a low referral and treatment rate (1.9% and 1.4% respectively) but in a high percentage of missed cases (2.6%). The combined CHC and US-screening led to a percentage of missed cases of 1.3% and a treatment rate of 2.4%. The referral rate was estimated to lie between 2.4 and 3.7%.

DISCUSSION: This study shows that US-screening compared to CHC-screening detects more children with DDH and that more of them are detected at an earlier age. To accomplish this, fewer children have to be referred. However, even general US-screening does not eradicate late cases. The higher treatment rate in the population screened by US might be a result of overtreatment. Based on the decision tree analysis it was concluded that US-screening at the age of three months was the best performing US-screening strategy.

Key words: developmental dysplasia of the hip, mass screening, ultrasonography, infant, sensitivity and specificity, hip dislocation, congenital

REDUCING THE RISK OF SUDDEN INFANT DEATH IN FLANDERS: AN OVERVIEW (134)

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INTRODUCTION: Sudden Infant Death Syndrome (SIDS) or cot death is the sudden and unexpected death of an apparently healthy infant, which remains unexplained after performing a complete post-mortem investigation, including review of the clinical history of the child, examination of the death scene and a complete autopsy. It is the most common cause of death in infants between 1 month and 12 months of age. While the sudden unexpected death of an infant may be the result of a number of processes, the leading cause has not been elucidated.

SUBJECTS: Epidemiological studies have demonstrated strong associations between the prone sleep position, cigarette smoking during pregnancy, the environment of infants, high temperature in sleeping environment and the incidence of sudden death. Those mutable risk factors were the basis for the campaigns.

METHODS: The campaign conveyed four health education messages: 1) put the baby to sleep on the back; 2) keep the baby in a smoke-free environment; 3) do not let the baby get too hot; 4) do not leave the baby alone when asleep.

RESULTS: Since the introduction of the risk-reducing programme in 1993 by private initiatives and, later by Child and Family in Flanders and ONE in the Walloon region, there has been a dramatic reduction of sixty percent in the rate of sudden infant death in Belgium.

Similar health education campaigns were conducted in other countries.

DISCUSSION: In order to be able to classify every unexpected death as 'cot death', a complete autopsy must be performed. Since March 2003 a legislation concerning systematic autopsy in case of death of children younger than eighteen months has been in place, but results are not yet known. To investigate and to monitor the role of sleeping arrangements as risk factors for sudden infant death as well as accidents such as suffocation, discussions were started with producers to establish a survey of safe and unsafe products. The object is to give parents the right information when buying bedding materials. At the end of the year a customer based registration will be started to report safety problems or incidents with the use of child products.

CONCLUSION: Health professionals, parents and providers should be aware of the current guidelines against SIDS.

Key words: child and family, sudden infant death syndrome, cot death, unexpected death, autopsy

THE DEVELOPMENT OF A CHILD AND YOUTH HEALTH CARE GUIDELINE 'DETECTION OF CONGENITAL HEART DISEASES' IN THE NETHERLANDS (80)

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INTRODUCTION: Yearly about 0.8% of neonates are born with congenital heart diseases (CHD, in the Netherlands 1200-1600 newborns). About 50% of these malformations are obvious immediately after birth. Others give problems weeks/ months later. In an effect-evaluation it was proven that systematic screening for CHD in Child Health Centres if carried out in a standardized manner, contributes to timely detection and treatment of CHD. This will also reduce irreversible damage to the child. Guidelines for the detection of CHD as early as possible were developed with standardised procedures for the screening and referral.

METHOD: A working group of expert doctors and nurses from the Child and Youth Health Care was put together, also including a member of the patient foundation. Literature was collected from different databases, by snowball method and by experts. By analysing the literature and discuss subject in the group the first version of the guidelines was developed. This version was published on the internet and open for comments of all who were interested. Also, paediatric cardiologists, paediatricians, midwife and general practitioners were asked to criticize the text. A next version was formulated. This version was tested by doctors and nurses in practice in one Child Health Centre. Their comments were incorporated in the final version of the guidelines.

RESULTS: It is necessary that nurses from the Child Health Centres perform a standardized examination during the house-visit in the second week after birth of the baby. In the family history and medical information of the mother important risk factors can be discovered. During inspection, tiredness or cyanosis during exertion (such as crying or feeding) or failure to thrive could give more important clues.

At the Child Health Centre the baby will be examined by the physician at the age of one month. Strict criteria for screening and referral are given.

It was recommended to continue the screening by doctors and nurses until the age of four years. After that age, the routine examination is only recommended on indication.

Different suggestions for update training and research were done.

DISCUSSION: Although the examination does not fully meet the criteria of Wilson and Junger it is the best available instrument.

CONCLUSION: Guidelines on early detection of CHD for the Child and Youth Health Care were developed to promote a higher quality of preventive healthcare based on evidence-based research.

Key words: prevention, early detection, congenital heart disease, standardization, child health care

ADJUSTMENT OF RECOMMENDATIONS IN FEEDING INFANTS AND TODDLERS AS A RESULT OF A QUESTIONNAIRE STUDY IN FLANDERS BELGIUM (216)

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INTRODUCTION: Developing a nutrition policy for infants and toddlers was the main goal for Kind en Gezin in the period 2001-2004. From January–October 2002 factors related to initiation, duration and early cessation of breastfeeding as well as the dietary intake and feeding practices of young children in Flanders Belgium were examined. The results led to adjustment of the recommendations of feeding infants and toddlers.

METHODS AND SUBJECTS: Data were collected by questioning nurses in maternity wards and baby- welfare- clinic nurses. For the second part of the study 2925 households with children of 3, 6, 12, 24 months old completed questionnaires about food consumption and feeding and care practices.

RESULTS: Strong motivation, family and friends, training level and job situation influence the choice for breastfeeding of the (future) mother. The decision breastfeeding or formula is made prenatally in 70% of the cases. Breastfeeding was given in 59 % of the children on the sixth day after delivery, 25 % at 3 months and drops to 10 % at 6 months. The way breastfeeding is experienced by the mother and the amount of information given in the maternity ward influence the duration of breastfeeding. Physical problems of the mother, sucking problems of the child and returning to work are associated with premature cessation of breastfeeding. At the age of 3 months 20,3 % of the children drinks regularly tea and water. Solid foods were introduced by 10, 8 % of the mothers. At 6 months fat supply to solid food is insufficient (30%). Protein intake exceeds the recommended dose (10 %- 28,5 % at 1y). By the age of 1 year a lot of children drink an inadequate milk formula (15 %- 23,5 % at 2 y). Mothers give more often soft drinks to their toddlers (33 % at 2 y). Vitamin D supplementation for breastfed infants was insufficient.

DISCUSSION: Adequate information on breastfeeding issues should be given to future mothers in secondary schools, during pregnancy by gynecologists, while they are in hospital and when the baby is 3 months old. New objectives in the pediatric nutrition policy are adequate vitamin supplementation, protein and sugar intake during infancy, adequate milk formula for toddlers and reducing bottle use at sleeping time.

Key words: paediatric nutrition policy, breastfeeding, infants, toddlers

THE MOST OFTEN CHRONICAL DISORDERS OF PRESCHOOLERS IN THE VINKOVCI REGION (89)

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INTRODUCTION: Chronical disorders were registered by examination for inscription into the first grammar school class. Those disorders were detected by paediatrician services of preschoolers.

AIM: to show the most often chronical disorders of preschoolers who live in the Vinkovci region, with city-country and male-female comparison.

SUBJECTS & METHODS: Study included 1426 children, who were examined for inscription into the first grammar school class for school year 2004/2005 in the Vinkovci region. 742 of them were boys and 684 were girls. City zone included 473 children, and country areas 953 children. Data were assigned anamnestic from parents and from yellow patient's records, which are necessary on the examination.

DISCUSSION: all results about the percentage of chronical disorders don't deviate from Croatian mean, and are smaller then those in war years (for example, percentage of the night urination has fallen from 3,7 % to 1,5 %).

CONCLUSION: the most often chronical disorders, mentioned in this study, show increase of allergic children. All mentioned chronical disorders are more often among boys then girls. Except allergies and visual disorders, other disorders are more often among country children.

Key words: chronical disorders, preschoolers

AFTER-CARE FOR NEONATES-AT-RISK: A REASON FOR CONCERN FOR PAEDIATRICIANS AND CHILD HEALTH CARE? (62)

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INTRODUCTION: Problems during or after pregnancy or delivery occur in about 5% of the newborns, resulting in admission to a hospital. After coming home these infants and their parents need extra attention. Therefore transfer of information and communication between hospital and child health care is essential. In 1997 a guideline "Aftercare of premature, dysmature and other neonates with a potential health risk" was published with the intention of improving the care of these newborns. The guideline was disseminated to the paediatric wards of the hospitals and to child health care centres with the advice to make arrangements locally. As there were signals that communication and cooperation were still inadequate this was investigated.

OBJECTIVE: Inventarisation of the use of guidelines, the manner and degree of exchange of information, the availability of extra care projects and the cooperation of paediatricians and physicians working in child health centres providing care for newborns-at-risk.

DESIGN: inventory questionnaire study

METHODS: A questionnaire was sent to the paediatric wards of all 104 hospitals and the 62 centres for child health care in the Netherlands. The questions concerned the use of guidelines, the transfer of information, the presence of extra measures of care, the concerted actions of paediatricians and physicians working in child health centres and possible problems in cooperation.

RESULTS: 46% of the child health centres and 74% of the paediatric wards use guidelines in the transfer of information about newborns-at-risk. In about half of the cases nurses send their information at the moment of discharge from the paediatric ward, whereas the exchange of medical information takes place in only 10-20%. Often extra care projects and consulting-hours were not known to the professionals of the other institution. Problems in cooperation are of a practical nature; unfamiliarity with the expertise of each other and concerns about the privacy of information.

CONCLUSION: Improvement on communication between paediatric wards and child health centres is desirable especially to improve the after-care of the newborn-at-risk. Recently in some locations in the Netherlands working agreements have been made. These projects will be evaluated next year. The conclusions will be used to update the existing guideline.

Key word: aftercare newborns, cooperation, paediatricians, child health care