Original Paper

Annals of Nutrition & Metabolism

Ann Nutr Metab 2015;66:31–35
DOI: 10.1159/000365766

Received: May 23, 2014
Accepted after revision: June 30, 2014
Published online: December 13, 2014

# Core Data Necessary for Reporting Clinical Trials on Nutrition in Infancy

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**Key Words**
Clinical trials · Data reporting · Human experimentation · Meta-analysis · Research subjects

**Abstract**
This paper presents an updated and revised summary of the 'core data set' that has been proposed to be recorded and reported in all clinical trials on infant nutrition by the recently formed Consensus Group on Outcome Measures Made in Paediatric Enteral Nutrition Clinical Trials (COMMENT). This core data set was developed based on a previous proposal by the European Society for Paediatric Gastroenterology, Hepatology and Nutrition (ESPGHAN) Committee on Nutrition in 2003. It comprises confidential data to identify subjects and facilitate contact for further follow-up, data to characterize the cohort studied and data on withdrawals from the study, and some additional core data for all nutrition studies on preterm infants. We recommend that all studies on nutrition in infancy should collect and report this core data set to facilitate interpretation and comparison of results from clinical studies, and of systematic data evaluation and meta-analyses. Editors of journals publishing such reports are encouraged to require the reporting of the minimum data set described here either in the main body of the publication or as supplementary online material.



## Introduction

The recently formed Consensus Group on Outcome Measures Made in Paediatric Enteral Nutrition Clinical Trials (COMMENT) charged a working group to identify and define criteria for assessing key outcomes in paediatric nutrition trials [1]. In addition, this working group was asked to review and update the 'core data set' that should be recorded and reported in all clinical trials on infant nutrition, as first proposed in 2003 by the European Society for Paediatric Gastroenterology, Hepatolo-


0250–6807/14/0661–0031$39.50/0

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**Table 1.** Suggested identification data

| |
|---|
| Subject's study number[1] |
| Name |
| Sex[1] |
| Date of birth[1] |
| Caregiver's name |
| Home address |
| Telephone numbers (home, mobile, work) |
| E-mail/social media |
| Name and address of the family doctor/paediatrician |
| Hospital identification number, social security number or equivalent |
| Names, addresses and telephone numbers of relatives or close friends |

[1] Also requires data inclusion in the database as core data.

gy and Nutrition (ESPGHAN) Committee on Nutrition [2].

The working group was constituted in 2011 and developed a draft version of the COMMENT by email exchange, which was discussed further and agreed upon during two physical meetings held in the first half of 2012 and then submitted to a Delphi review process by the chairs of all COMMENT working groups [1], the ESPGHAN Committees (www.espghan.org), the Theme Leaders of the European Commission-funded Early-Nutrition Research Consortium (www.project-earlynutrition.eu) and the Nutrition Group of the European Society of Paediatric Research (www.espr.info). The working group reviewed the comments received and incorporated them into their final version.

## General Concepts

All clinical trials on nutritional interventions in infants and children should follow current standards of good clinical practice, data monitoring, ethics and personal data protection [3–5]. The reporting of the design and results of clinical trials should follow the updated 'Consolidated Standards of Reporting Trials' (CONSORT) guidelines for reporting parallel-group randomised trials [6] and the extension of the CONSORT statement for reporting of harms in randomised trials [7]. We suggest that the minimum core data set as defined here should be recorded for all clinical trials on nutrition in infancy and childhood and be reported in all publications of such trials either as part of the main paper or as supplementary material. Such consistent presentation of the characteristics of the populations studied will facilitate the interpretation and the comparison of findings of different studies as well as systematic reviews and meta-analyses. In addition to these general core data, further data will need to be reported depending on the nature of the study and the chosen endpoints and approaches to outcome assessments that are addressed by other working groups of the COMMENT initiative.

## Identification Data

Data to identify subjects and facilitate contact for further follow-up as suggested in table 1 are not meant to be reported. In line with ethical principles and rules and regulations in place at the respective study sites, these confidential data must be stored securely, and access must be restricted to a limited and predefined number of study personnel. However, these data are important to enable contact with parents or other caregivers during the study, and potentially after the planned study end for unforeseen extensions of the study or for addressing unforeseen safety issues. Increasingly, there are indications of long-term effects of early interventions which are important to address. Researchers are encouraged to obtain consent for future contact with study participants upon enrolment.

## Data to Characterize the Cohort

Participants need to be well characterized, so that it is possible to determine whether participants are representative of the eligible population, and trial data can be more effectively compared (and, if relevant, aggregated) with data and results from other studies. The core data shown in table 2 should be recorded and reported for all studies on infant nutrition. For studies on nutrition in preterm infants, additionally those listed in table 3 should be recorded and reported.

## Data on Withdrawals from the Study

Details on subjects who withdraw, as well as the reasons for withdrawal, must be recorded where possible and reported in order to address potential bias. Noncompliance with the study protocol should not lead to

**Table 2.** Core data for all nutrition studies on infants

| |
|---|
| Gestation in completed weeks [report method of determination (based on ultrasound or the date of the last menstruation)] |
| Parity |
| Number of children in the household |
| Mode of delivery |
| Number of live-born infants from this pregnancy |
| Infant sex |
| Weight (g), length (cm) and head circumference (cm) at birth |
| Age at study recruitment |
| Weight[1] (g), length (cm) and head circumference (cm) at recruitment and at each assessment, along with the age at study entry and at each assessment |
| Recording of infant feeding[2] |
| Whether fed human milk, formula or both (at study entry and at later time points) |
| Duration of exclusive human milk feeding (according to the definition of WHO, preferably in days)[3] |
| Duration of partial human milk feeding [i.e. feeding of human milk along with other energy-providing foods such as formula, other energy-providing liquids or complementary feeds (energy-containing solid or liquid foods fed to the infant other than breast milk or formula); duration to be reported preferably in days] |
| Duration of predominant human milk feeding (>80% of estimated energy intake) |
| Age (preferably in days) at the first introduction of formula feeding |
| Duration of exclusive formula feeding (preferably in days) |
| Type(s) of formula used and compositional characteristics |
| Supplements used, e.g. nutrient supplements or human milk fortifiers |
| Water (practiced in various parts of the world) |
| Age at the first introduction of complementary foods (preferably in days) |
| Father's weight and height at the time of recruitment |
| Mother's weight and height prior to/during the first 12 weeks of pregnancy or at the least 3 months after birth (time of measurement to be reported) |
| Maternal education (years of school and higher education) |
| Ethnicity/race of mother and father |
| Country of birth |
| Dominant language spoken at home |
| Maternal substance abuse (drugs/street drugs, smoking or alcohol), separately reported for pregnancy and for the postnatal period |

[1] If standard deviation scores are reported, investigators should indicate whether they are based on the WHO growth standard or on other growth references.

[2] It should be reported whether data were collected pro- or retrospectively, and how they were obtained (e.g. 3-day dietary record filled out by parents, 24-hour recall interview, data collection from hospital files or other).

[3] At each visit, ask whether anything but breast milk has been fed during the time interval since the last visit.

withdrawal of subjects from the study; rather, non-compliant subjects should be followed in the same way as subjects who are concordant.

Data indicating concordance or compliance should be collected in nutrition trials because they are important for the interpretation of trial results, even though primary statistical analyses will be performed on an intention-to-treat basis. Concordance or compliance should be assessed, for example, by obtaining prospective dietary records or structured interviews with caregivers, by collection of unused units of intervention products or weighing residual products in preweighed individual packages, by measurement of biomarkers in blood, urine or other samples, and by other suitable approaches.

## Conclusions

It is recommended that all studies on nutrition in infancy should collect and report the core data shown in table 2. Studies on nutrition in preterm infants should additionally collect the data in tables 3–5 to facilitate in-

**Table 3.** Additional core data for all nutrition studies on preterm infants

| |
|---|
| Antenatal steroid treatment |
| Postnatal steroid treatment |
| Days with assisted ventilation (including mechanical ventilation and continuous positive airway pressure)[1] |
| Days with supplementary oxygen[1] |
| Number of infective episodes treated with antibiotics and of culture-positive events |
| Number of nosocomial infections[2] |
| Necrotising enterocolitis (criteria for grading as in table 4) |
| Surgery (yes or no, and reason) |
| Intraventricular haemorrhage (criteria for grading as in table 5) |
| Death before discharge home (yes or no, age in days if yes) |
| Age at discharge to home (days) |
| Recording of infant feeding: |
| Days on intravenous feeding (with information on the type of amino acid and lipid emulsion)[1] |
| Age (days) when enteral feeding first commenced |
| Age (days) when first having >120 ml/kg as enteral feeding |
| Proportion of intake (% volume of total enteral feeding) as mother's own milk |
| Proportion of intake as donor human milk (% volume of total enteral feeding) |

[1] ≥4 h in any 24-hour period counts as a day.

[2] Nosocomial infection was defined as (1) a positive bacterial culture of blood or cerebrospinal fluid obtained ≥72 h after birth or (2) a positive blood or cerebrospinal fluid culture for coagulase-negative *Staphylococcus* obtained 72 h or more after birth and associated with generalised symptoms of illness for which the infant received antibiotics for ≥5 days [8].

**Table 4.** Necrotising enterocolitis (coding based on the severity of the illness according to the staging criteria of Bell et al. [9] and modifications of Kliegman and Walsh [10])

| | |
|---|---|
| Stage I | (suspect) clinical signs and symptoms, non-diagnostic radiographs |
| Stage II | (definite) clinical signs and symptoms, pneumatosis intestinalis on radiograph |
| IIa | mildly ill |
| IIb | moderately ill with systemic toxicity |
| Stage III | (advanced) clinical signs and symptoms, pneumatosis intestinalis on radiograph and critically ill |
| IIIa | impending intestinal perforation |
| IIIb | proven intestinal perforation |

**Table 5.** Cerebral lesions: germinal matrix/intraventricular haemorrhage (from Volpe and de Vries [11])

| | |
|---|---|
| Grade 1 | germinal matrix haemorrhage |
| Grade 2 | intraventricular blood without distension of the ventricular system |
| Grade 3 | blood filling and distension of the ventricular system |
| Grade 4 | parenchymal involvement of haemorrhage, also known as periventricular venous infarction (white matter disease) [12] |

terpretation and comparison of results from clinical studies and of systematic data evaluation and meta-analyses. Obviously, further data in addition to this core data set will need to be reported depending on the specific design and goals of the studies. Editors of journals publishing such reports are encouraged to require the reporting of the minimum data set described here either in the main body of the publication or as supplementary online material.


## Acknowledgements

The authors thank the members of the ESPGHAN Committee on Nutrition, the Theme Leaders of the European Commission-Funded EarlyNutrition Research Consortium, the Nutrition Group of the European Society of Paediatric Research and Prof. Kim F. Michaelsen, Department of Human Nutrition, University of Copenhagen, for reviewing this paper and for providing critical input and helpful suggestions. Partial financial support from the Commission of the European Communities, specific RTD Programme 'Quality of Life and Management of Living Resources', within the 7th Framework Programme, Project EarlyNutrition (FP7-289346), is gratefully acknowledged. This paper does not necessarily reflect the views of the Commission and in no way anticipates the future policy in this area. Additional support was provided by the EarlyNutrition Academy (www.early-nutrition.org).

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