

Development of a Standardized Pediatric Parenteral Nutrition for the First Days of Life of a Term or Preterm Newborn



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"Formula hospitalis"

development of an

industrial production

of double-chamber

bags.

Introduction

Parenteral nutrition (PN), composed of about 50 different ingredients, represents a complex and high-risk fabrication. PN is crucial for survival and neurodevelopment as well as the postnatal growth.

Medication errors are often related to PN and may include **prescription**, **transcription**, **preparation and administration errors**. Therefore, medication errors can result in **growth retardation**, **developmental disturbances and infections**.

Objectives

- Reduce the risk of medication errors and their potential impact on vulnerable patients by providing a standardized neonatal PN for the first days of life.
- Improve the safety and quality of the nutritional treatment of newborn term or preterm infants with a ready-to-use PN available 24/7 on wards.

Materiel and methods

Development of a neonatal PN conforming to the needs of the two involved neonatal services by a multidisciplinary working group Used references: The ESPGHAN guidelines of 2005 and 2018. A standardized PN

A standardized PN solution used at the HUG

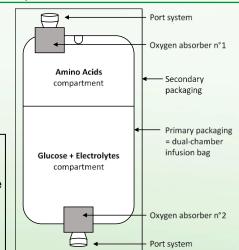
Results and discussion

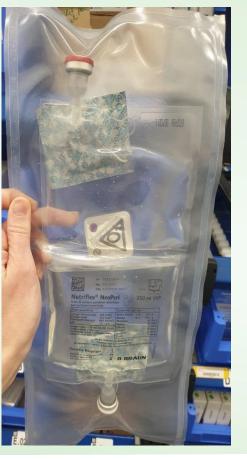
Characteristics: Goals: Stability: Volume: 250 mL Implementation in March • 18-24 months Osmolarity: <900 mOsm/L Storage at room temperature 2019 at the CHUV Oxygen absorbers to reduce Peripheral venous access Use of 80 bags/month Double-chamber bag Reduction of on-ward PN degradation reactions by Indication: first days of life preparations by 80% oxidation

Conclusions

The high-quality, ready-to-use neonatal PN with a 24/7 availability safes time for caregivers and increases the patient safety.

Composition 250 mL 79 mL Amino acids 31.4 g/L Glucose 100.1 g/L Sodium 20 mmol/L Calcium – 171 mL 11 mmol/L 8.6 mmol/L Phosphate Chloride 10 mmol/L Non-protein energy 400 kcal/L Total energy 525 kcal/L 883 mOsm/L Osmolarity







Conflict of interest to disclaim for the collaboration with B. Braun Medical

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