

DESIGNING AND IMPLEMENTING A STANDARD NUTRITIONAL STARTER SOLUTION FOR PRETERM INFANTS

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BACKGROUND

Parenteral nutrition administration to preterm infants in their first hours of life improves their survival. As it is not always possible for the Pharmacy Department to compound parenteral nutrition solutions, compounding a standard starter solution for preterm children to be administered within the first 24 hours after birth was arranged with the Neonatology Department.

PURPOSE

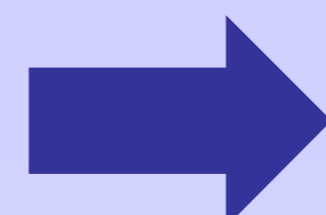
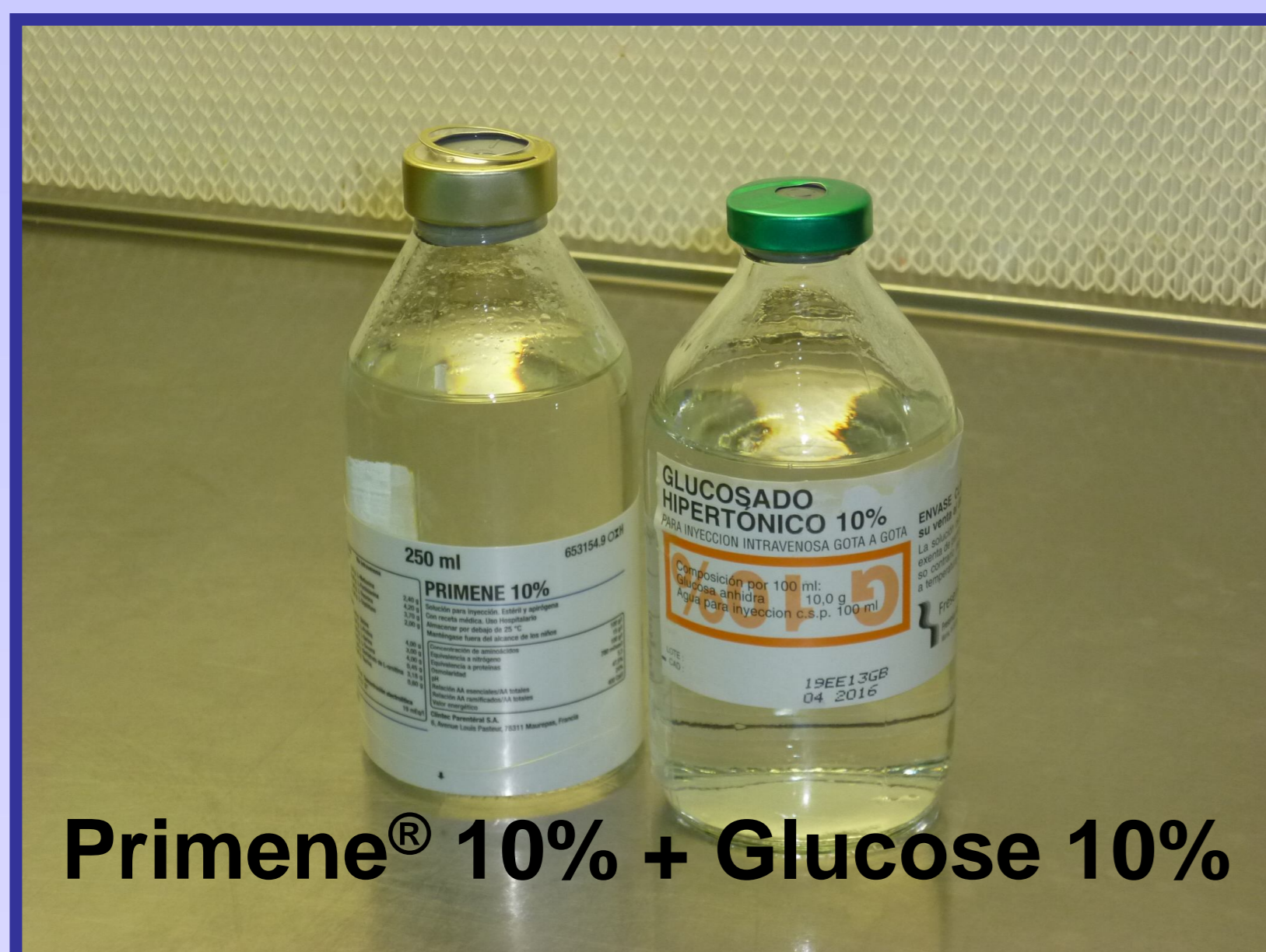
To design and implement a standard starter solution of adequate composition and stability for preterm infants, as a means of meeting their nutritional requirements during their first hours of life.

MATERIALS AND METHODS

We performed a bibliographic search to determine nutritional requirements for neonates. In order to ensure a positive nitrogen balance and to avoid protein catabolism, adequate inputs of amino acids and glucose should be administered within the first hours of life in order to provide at least 4 g/kg/day of glucose and 1 g/kg/day of amino acids.

RESULTS

A STANDARD NUTRITIONAL SOLUTION WAS PREPARED IN SYRINGES



FORMULATION COMPOSITION

Aminoacids (Primene® 10%): 1,5 g
Glucose: 3,75 g
Volume: 52,5 ml (+ 3,5 ml purge)

ADVANTAGES

Syringes: administration by volumetric infusion pumps
629 mOsm/l: central or peripheral administration
Stability of 7 days (refrigerated): storage in Neonatology Department

SINCE IMPLEMENTATION (Feb 2010):

840 starter solutions compounded for a period of 18 months
6 – 12 starter solutions compounded **weekly** and stored at the Neonatology Department

CONCLUSIONS

This formulation makes it possible to meet glucose and amino acid requirements for preterm neonates within their first 24 hours of life, thus preventing excessive protein loss. Its long-term stability makes it possible to store it at the Neonatology Department, thus guaranteeing its availability at times when it is not possible to compound a parenteral solution in the Pharmacy Department.