Background Neonatal hypoglycaemia is a condition in which the amount of blood glucose is lower than <45 mg/dl. Transiently low blood glucose levels are physiologic and occur during the establishment of postnatal glucose homeostasis. Nevertheless, severe prolonged hypoglycaemia is associated with brain injury and poor neurodevelopmental outcome. Preterm, small for gestational age infants, infants of diabetic mothers and large for gestational age infants are at high risk. Diagnosis is suspected empirically and is confirmed by glucose testing. There are several treatment options available for the management of neonatal hypoglycaemia: breast-milk, infant formula, intravenous (IV) or oral dextrose therapy. The neonatal care unit asked the pharmacy for collaboration in the galenic preparation of 40% dextrose gel for the treatment of neonatal hypoglycaemia.

Purpose The objective of this work is the preparation of a galenic formulation in order to develop a safe and effective treatment for the management of hypoglycaemia in newborns.

Material and methods A systematic literature review concerning dextrose gel preparation was conducted and the pharmacy service developed a procedure for the galenic formulation. The preparation consists of a glucose gel solution and carboxymethylcellulose. The obtained gel was divided into sterile enteral feeding syringes with a female connector.

Results In our hospital, in the first semester of 2018, 30 newborn infants had hypoglycaemia. Fifteen received intravenous dextrose therapy and six babies were given breastmilk or formula by syringe. Nine infants were treated with dextrose gel 5 ml/Kg massaged into the buccal mucosa. Only one patient with severe hypoglycaemia (26 mg/dl) received additional intravenous dextrose.

Conclusion Dextrose gel formulation prepared by the pharmacy service responded to the needs of the neonatal care unit. This preparation has been recommended for the management of neonatal hypoglycaemia and reduced the admission to the newborn intensive care unit for intravenous glucose. Our findings show that treatment with 40% dextrose gel is effective in the management of hypoglycaemia and does not adversely affect breastfeeding.

REFERENCE AND/OR ACKNOWLEDGEMENTS

No conflict of interest.