Introduction

Parenteral nutrition is often required for sick or preterm newborns. There are three possibilities:

- Individualised nutrition
- Standardised nutrition
- Commercialised nutrition

In 2015, the Inspection Générale des Affaires Sociales (IGAS) investigated a big part of French neonatology department and pharmacy to establish the state of practice concerning parenteral nutrition. This report documented some research demonstrating all steps of parenteral nutrition.

In April 2018, the Haute Autorité de Santé (HAS) published new national guidelines for parenteral nutrition in newborns.

Purpose

The aim of this study was to evaluate the substitutability potential of individualised nutrition by standardised or commercialised nutrition in a regional maternity hospital.

Material and method

- Retrospective chart review of all parenteral nutrition for newborns from August 2017 to January 2018.
- The concentrations of glucose and electrolytes (potassium, sodium, phosphorus and calcium) in individualised nutrition were compared to the concentrations in standardised and commercialised nutrition.

Results

81% of individualised parenteral nutrition (PN) were not substitutable:

- An individualised PN bag is required
- An individualised PN bag is required

No individualised parenteral nutrition were immediately substitutable but 230 (10%) were potentially substitutable by adding one or more elements (average 3.4 adds).

187 individualised parenteral nutrition were potentially substitutable by a standardised parenteral nutrition and 43 by a commercialised parenteral nutrition.

Discussion

The individualised parenteral nutrition rate in our maternity hospital is in line with national rate.

Following HAS guidelines: 91% of individualised parenteral nutrition were not substitutable. About 9% remaining?

- The guidelines preconize to compound individualised parenteral nutrition rather than doing some adds

- In our maternity hospital, we are using an automata to compound individualised parenteral nutrition is easier than manually doing the adds

The vitamins and oligo elements were not compared because there are no clear guidelines on these quantities and because there are low clinical consequences if there are a little less or more of them on a short period.

Conclusion

None of the individualised parenteral nutrition analyzed were immediately substitutable because the concentrations were specifically adapted to the newborn clinical situation. Finally, following strictly the guidelines, the answer to the question “do we have to switch some individualised parenteral nutrition to standardised or commercialised parenteral nutrition?” is, No, we don't have to do that.

Further studies have to complete this one: is it possible to switch some standardised nutrition to commercialised nutrition? If commercialised nutrition are adapted to some newborns, what about the cost compared to our individualised and to our standardised parenteral nutrition?

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