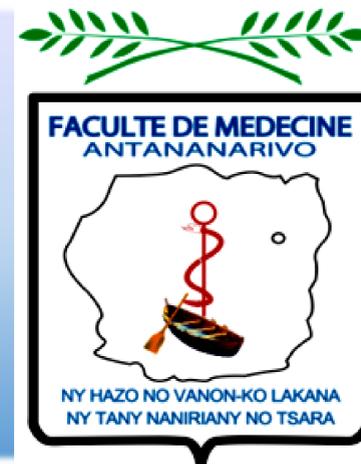




Neonatal postoperative nutrition after surgical treatment of digestive atresia: A challenge to be faced in Madagascar.

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BACKGROUND

Some digestive surgeries require postoperative fasting. Cessation of feeding in neonates leads to some deleterious consequences.¹ Due to non functionality of digestive tractus, digestive malformations are associated to a poor nutritional status in wich surgical procedures of neonatal digestive malformations are often performed ; this can alter the quality of the postoperative healing.¹ So, an optimal nutritional support is necessary to ensure a favorable outcome.²

In Madagascar, congenital digestive malformations represent 6% of admissions.³ Digestive atresia are the most frequent of those pathologies.³ Also, the perioperative nutritional support adapted to the infants is failing.

The purpose of this study was to analyze the nutritional management of newborns operated for their digestive system abnormalities.

METHODS

We carried out a 24-month retrospective study (January 2015 to December 2016) of Malagasy infants admitted in surgical intensive care unit of CHUA J.R. Andrianaivalona (Antananarivo-Madagascar), for digestive atresia. The patients who presented those malformations, but who haven't been operated were excluded.

We retained operated digestive atresia. The demographic criteria, the type if the digestive atresia, the characteristics of the nutritional support, as well as the outcome of the patient were analyzed.

Results are expressed as median [extremes]. The Spearman correlation test was used (XLSTAT®) with a significant p value under 0.05 .

CONCLUSION

To introduce early enteral nutrition is the current recommendations. The neonatal postoperative nutrition in Madagascar is still precarious ; parenteral nutrition inputs adapted to the newborn should be available. However, the latter being expensive, the alternative in a low-income country like Madagascar would be the enteral administration of breast milk, as soon as conditions permit it, with close clinical and biological monitoring.

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RESULTS

Of the 40 newborns admitted in surgical intensive care unit, during the study period, 16 were retained . Median age was 4 [1-11] days old. Neonates were mainly boys (10 versus 6 girls). Birth weight was 2210 [1400-3030] g). The most observed and operated digestive malformations were esophageal and duodenal atresia (10 cases). Intervention time was 1 [0-16] days after hospital admission.

A parenteral admixture of amino-acids (Celemin® manufactured by CLARIS LIFESCIENCES Ltd) was given in eight patients (Figure 1).

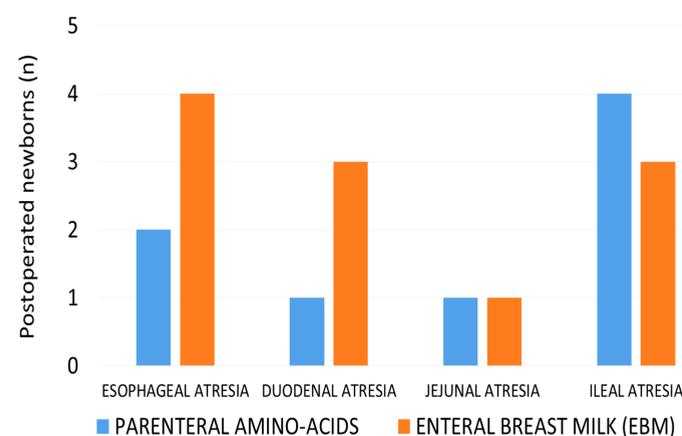


Figure 1: Postoperative nutrition after surgical cure of digestive atresia

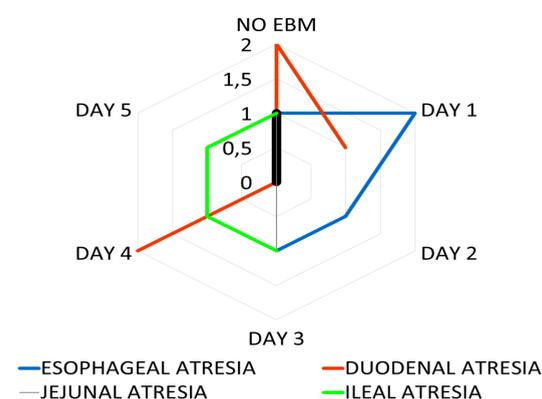


Figure 2: Administration time of enteral breast milk (EBM)

Administration time of postoperative enteral breast milk was 3 [1-5] days for 11 newborns. This was correlated with the site of atresia ($p=0.006$; Figure 2). The length of stay was 7 [2-38] days. The postoperative outcome wasn't correlated with the enteral administration of breast milk ($p=0.0918$).

In survival newborns, even if a soon administration time of enteral breast milk was associated to short length of stay, it wasn't significant ($p=0.321$, Figure 3),.

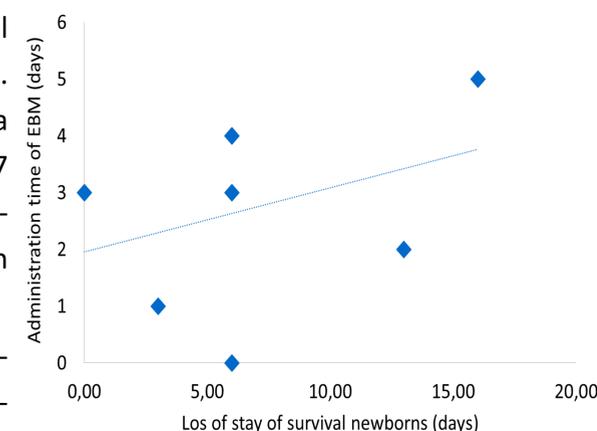


Figure 3: Los of stay of survival newborns and administration time of enteral breast milk (EBM)

DISCUSSION

In this study, enteral breast milk (EBM) can be an alternative, in front of lack of adapted neonatal parenteral nutrients, in postoperative management of digestive malformations. Prolonged starvation may cause immune deficiency, bacterial translocation and can lead to infections and adverse effect on tissue regeneration.¹ Finding a balance of appropriate nutritional intake to meet metabolic demands is frequently difficult during the perioperative period.⁴ So EBM could be interesting in neonatal postoperative digestive management. Furthermore, enteral feeding has benefits in malnourished patients and is superior to total parenteral nutrition.^{2,4} It accelerates intestinal transit, leads to faster recovery of bowel function and contribute to shorter hospital stay.^{1,2} Plus, EBM allows to a better tolerance of future oral feeding , and diminishes aspiration pneumonia.^{2,5}