CATCH UP GROWTH IN INFANTS BORN SMALL FOR GESTATIONAL AGE: BREASTFEEDING VS STANDARD FORMULA FEEDING IN TUNISIA

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Background:

Fetal growth restraint, if followed by a rapid catch up growth has been linked to an increased risk of diabetes and metabolic syndrome in adulthood. Long-term studies have shown that such risk is modulated by nutrition in early infancy.

Aim:

Our objective was to compare small for gestational age infants'(SGA)'s gains in weight, length and cranial circumference (cc) in a breastfeeding group (BFG) to those in a standard formula-feeding group (FFG).

Methods:

- we conducted a prospective cohort study on **30** SGA infants with ≥ 37 weeks of gestation recruited from a hospital in Tunisia during the year 2017.
- When it was not possible to breastfeed, a standard formula was prescribed.
- Then we measured weight, length and CC at 3 and 6 months of life
- Comparisons were done with Mann Whitney test with SPSS 20.0.

Results:

- There were 17 infants in **BFG** and 13 in **FFG**.
- There were no significant differences between them in the sex, gestational age and anthropometric parameters (Table 1).
- There was a significant difference in the mean of weight at 6 months ($p=0,04$) (BFG: 7170 grams ± 950 vs FFG: 7709 grams ± 713). (chart 1)
- However, there was no difference between the other means of the anthropometric parameters during the follow-up. (chart 2,3)
- The gain of length between 3 and 6 months was also significant ($p=0,03$) (BFG 5,6 cm $\pm 1,18$ vs FFG 7,2 cm $\pm 1,98$).

- We have also found a significant difference in proteins levels ($p=0,029$) (BFG 59,5g/l $\pm 5,57$ vs FFG 54,4g/l $\pm 2,87$) and in HDL cholesterol levels ($p=0,034$) (BFG 0,57mmol/l $\pm 0,16$ vs FFG 0,82mmol/l $\pm 0,29$) (Table 2).

Comments:

- Our study confirms that breastfeeding provides a slower rate of weight gain than standard formula-feeding.
- This finding suggests that protein-rich formula will be a provider of faster weight growth during the first months of life.
- Breastfeeding is recommended as the optimal feeding method and nutrition for all infants but is particularly important for SGA.
- Our biological results suggest that maternal milk promotes protein elevation and lowers HDL cholesterol levels in the 3 first months.
- A weakness of our study is the relatively low number of participants because of their difficult recruitment.

Conclusion:

BFG have a slower catch up in growth at 6 months of life compared to FFG.
Exclusive breastfeeding until 6 months of life would be a recommendation that decrease the risk of adult diseases.

Table 1: Gestational age and anthropometric parameters at birth

Mean	Gestational age	Birth Weight	Birth length	Birth cc
BFG	39,1	2510	46,7	32
FFG	39,1	2426	47,8	32,9

Table 2: Biologic results at 3 months

	Hb	Pt	Creat	Glyc	HDL ch	TG
BFG	9,4 g/dl	59,5 g	26,7 μ mol	5,04 mmol	0,57 g	1,4 g
FFG	9,9 g/dl	54,4 g	28,5 μ mol	5,1 mmol	0,82 g	1,34
p	NS	0,029	NS	NS	0,034	NS

References:

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