

## NEWBORN'S FEEDING AT DISCHARGE

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breastfeeding, artificial feeding, mix feeding, gestational age (GA), birth weight (BW)

**Cuvinte cheie:** alimentație naturală, artificială, mixtă, vârstă de gestație (VG), greutate la naștere (GN)

**Abstract:** The authors are presenting the results of a prospective multicentric research conducted on a group of newborns from 12 maternities in Romania. The purpose of this trial is to establish the newborn's mode of feeding at discharge from maternity. Prenatal and neonatal factors that could influence the type of nourishment were analyzed. The data gathered were processed in a simple statistical way. The results indicate a sustained promotion of breastfeeding.

**Rezumat:** Autorii prezintă rezultatele unui studiu prospectiv multicentric, efectuat pe un lot de nou-născuți din 12 maternități de nivel III din România. Scopul studiului este stabilirea modului de alimentație a nou-născutului la externarea din maternitate. Au fost analizați factori peri- și neonatali care ar putea influența tipul de alimentație. Datele colectate s-au prelucrat statistic simplu. Rezultatele indică o promovare susținută a alimentației naturale.

**INTRODUCTION**

For the past two decades OMS and UNICEF have been promoting all over the world exclusive natural feeding, right after delivery and continuous breastfeeding up to two years of age. (1,2,3) In order to accomplish this, "Baby Friendly Hospital" initiative was implemented over the world. In our country ten maternities have been certified as Baby Friendly since 1995. In these maternities natural feeding is encouraged through the admission of the newborn in the same room with their mother throughout the whole hospitalization (rooming-in system). Half of the maternities which have participated in this trial are "Baby Friendly Hospital".

For a better knowledge of the newborn's mode of feeding in maternities, we considered it necessary to collect, for Romania also, prenatal and neonatal specific medical assistance data granted both to the mother and the newborn. Thus we can identify negative and positive factors which can influence early and sustained breastfeeding, starting with the neonatal period. The knowledge of these factors gives us the possibility of intervention, whenever appropriate, to improve the natural feeding of all newborn categories, considering that its well known beneficial effects

**THE AIM OF THE STUDY**

The purpose of this trial is to establish the newborn's mode of feeding at discharge from maternity. Prenatal and neonatal factors that could influence the type of nourishment were analyzed.

**MATERIAL AND METHOD**

The studied group comprised 13 770 newborns in 12 maternities all over the country.

Participant maternities were: Baia Mare, Brașov, Cluj 1 (County Hospital), Cluj 2 (Maternity „O. Fodor”), Cuza Vodă Iași, Constanța, IOMC Polizu București, Oradea, Panait Sârbu București, SCJS Sibiu, Târgu Mureș, Dr. Dumitru Popescu Timișoara..

For 6 months, from the 1<sup>st</sup> of November to the 31<sup>st</sup> of

April 2009, we have gathered, from the charts, at discharge, the following data concerning every newborn that entered the trial: gestational age (GA), birth weight (BW), place of birth, Apgar score (AS), rooming-in admission, time and technique of the feeding, gender repartition, type of pathology.

The enrolled newborns had GA between 22 and 43 weeks, BW of 950-5740g, and were fed either natural, artificial or both, the techniques used being breastfeeding, bottle feeding, syringe and gavage feeding. The trial included healthy newborns as well as those with asphyxia pathology, identified based on the Apgar score. Respiratory and neurological disorders diagnosis were decided by attending physicians based on common guidelines.

No exclusion criteria were used. All newborns who undertook neonatal medical assistance during the period mentioned above were included.

The data gathered were processed in a simple statistical way.

**RESULTS**

The number of newborns taken cared of for 6 months, per clinic, throughout the country, was approximately the same for each, around 1000. Most of them were registered in Cuza Voda Maternity in Iasi (three clinics) and County Maternity Oradea (one clinic) and the smallest number was registered in both clinics in Cluj. (Figure I)

Based on BW, small for gestational age newborns ( $\leq 2500$ g) represented 11,4% of the total, while according to GA still 11,4% were preterm, thus overlapping on the percentage of the low birth weight.

In all medical units natural feeding prevailed, without regional differences, with small variations in favour of mix and artificial feeding in the maternities not certified as "Baby Friendly Hospital".

Breastfeeding was encountered in 89% of cases despite of the fact that only 81% of the group's newborns have benefited from rooming-in admission.

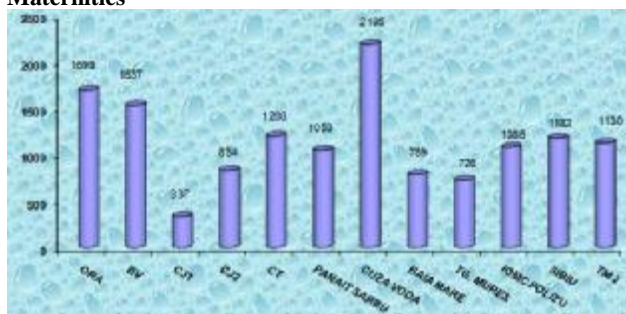
More than 94% of appropriate for gestational age

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## CLINICAL ASPECTS

(AGA) term newborns are breastfed. The percentage drops along the weight to 7% for those with BW  $\leq$  2500g, although 55,4% of them, respective 36,5% under 1500g, a percentage almost identical (36,1%) to the one of the preterm newborns with GA under 32 weeks, are naturally fed but through other techniques. Therefore, bottle feeding was registered in 44,6% of small for gestational age newborns. Newborns with BW < 2000g and GA < 32 weeks were fed mostly by gavage, while the syringe was occasionally used especially at 33-34 weeks.

**Figure no. 1. Distribution of the study group in Maternities**



There are no differences ascertained regarding gender distribution of natural feeding, although 53% were males.

Delivery by cesarian section does not influence feeding mode, although breastfeeding had a late onset in 18% of cases. 17% were bottle fed until mobilization of the mother, 1% through gavage (small for gestational age newborns and appropriate for gestational age with pathology newborns).

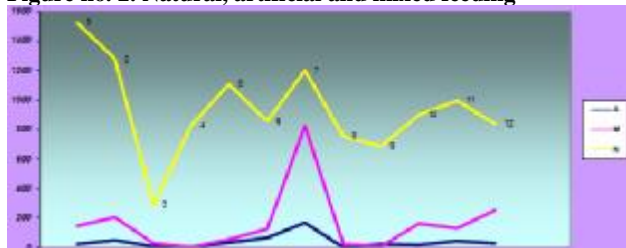
In 91,5% of cases, the newborn's wellbeing and the adjustment to extra uterine life were good, with Apgar scores of 8-10. A percentage of 8,5% of newborns were affected by moderate and severe asphyxia. Only 53,4% of those with severe asphyxia were naturally fed and 61,4% of those with Apgar scores of 3-7. Newborns with Apgar scores < 3 were fed by gavage (6,6%) and by bottle (50%).

Pathology was encountered in 14% of cases. First position was held by respiratory and neurological disorders (10%). Respiratory pathology negatively influenced natural feeding (38% artificial and mixed feeding) more than neurological one (8% artificial and 15% mixed).

### DISCUSSIONS

1. Natural nourishment is promoted nationwide on a proportion of 89%, without regional differences, even in the absence of rooming-in system. (Figure 2)

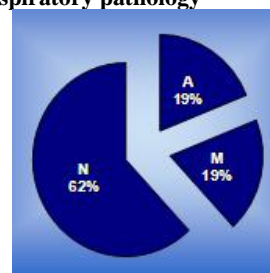
**Figure no. 2. Natural, artificial and mixed feeding**



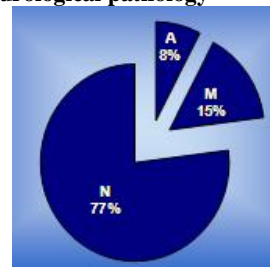
2. Although 55,4% of small for gestational age newborns benefit from natural nourishment, only 7% of them are breastfed.
3. Comparative data given by Vermont Oxford Network – 2009, which concludes that preterms under 32 weeks are natural fed in an average of 59%, in the group studied only 36,1%, have benefited from this type of nourishment.

4. The bottle remains the second feeding technique for both human milk and formula.
5. Gavage is used mostly under 34 weeks and 2500g, but only in 0,2% of cases human milk is administrated.
6. There are no significant differences regarding the breastfeeding of newborns delivered by C-section and those vaginally delivered.
7. Birth asphyxia, as well as respiratory and neurological pathology significantly reduced the incidence of breastfeeding and natural nourishment. (Figure III, IV)

**Figure no. 3. Respiratory pathology**



**Figure no. 4. Neurological pathology**



### CONCLUSIONS

1. Natural nourishment is the primary way of newborn feeding at discharge from maternity.
2. The encouragement of natural nourishment is done in the "Baby Friendly Hospital" maternities, which benefit from a rooming-in system, and also in those who don't benefit from these advantages
3. We consider that an intense and sustained promotion of natural alimentation is necessary also for preterm low birth weight infants and pathology.
4. This trial is a good example of both national wide unitary feeding conduct and team work among country wide neonates.

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