Volume 3, Issue 10, October 2025 ISSN (E): 2938-3765

HYGIENIC ASSESSMENT OF THE NUTRITIONAL STATUS OF POSTTERM CHILDREN

Ortiqov Bobomurod Baymamatovich
Associate Professor, PhD, Department of Hygiene of Children, Adolescents and Nutrition, Tashkent State Medical University

Hasanova Sayyora Shomurot qizi
Master's Student, Department of Hygiene of Children, Adolescents and Nutrition, Tashkent State Medical University

Abstract
In this study, the nutritional characteristics and physical development indicators of 50 post-term infants were examined. According to the research results, 32% of the children were fed with artificial nutrition, while 34% had a mixed feeding pattern. Among them, 42.0% were breastfed up to one year of age, and 58.0% continued breastfeeding up to two years. Regarding the number of daily meals, 58.0% of the children ate 1–4 times per day. Additionally, 58.0% of the children received supplementary feeding up to 6 months of age.
In terms of food consumption levels, 48.0% of the children consumed bread, cereals, porridge, and grain-based foods in excess of the recommended amount, while 36.0% consumed foods containing salt and sugar above the normal limit.
The findings of the study revealed that most post-term infants had disrupted eating patterns. This condition may contribute to delayed physical development and an increased incidence of various diseases among these children.

Keywords: Post-term newborn, nutrition, and somatic appearance of the body.

Introduction

Nutrition and feeding strategies for preterm infants play a crucial role in their physical development and growth. Studies have shown that proper nutrition provided through breast milk, specialized formulas, and nutritional supplements improves the growth rate of preterm infants, optimizes body composition (mass and fat ratio), and supports neurophysiological development. In particular, initiating enteral feeding in the early weeks enhances nutrient absorption and gastrointestinal adaptability, thereby improving long-term health outcomes. When these strategies are adapted for post-term infants, it is essential to consider their physiological needs and metabolic characteristics [1,3].

To optimize growth in preterm infants, nutritional strategies—especially high-protein diets provided through breast milk and specialized formulas—are of great importance. Research indicates that adequate caloric and protein intake during the early weeks improves weight gain, linear growth, and bone mineralization in preterm infants. Similar approaches may also be beneficial for post-term infants, as their nutritional demands can likewise be elevated [4,9,10].

Web of Medicine: Journal of Medicine, Practice and Nursing
webofjournals.com/index.php/5

Early nutrition has a significant impact on bone health in preterm infants. Deficiencies in calcium, phosphorus, and vitamin D reduce bone mineralization, increasing the risk of osteopenia or rickets. For post-term infants, especially those with macrosomia or other metabolic disorders, these nutritional requirements are also important, as proper nutrition supports bone development [1,5,7]. Enteral (oral) and parenteral (intravenous) feeding methods play a vital role in supporting the growth of very low birth weight (VLBW) infants, particularly in preventing early growth delays during the first weeks of life. Deficiency of trace elements can lead to impaired bone development and overall growth problems. Studies have demonstrated that high-protein (3.5–4 g/kg/day) and high-energy (120–150 kcal/kg/day) diets improve head growth in VLBW infants ($p<0.05$) [56]. Furthermore, feeding with ≥50% breast milk during the first 14 days reduces the risk of necrotizing enterocolitis (NEC) sixfold (OR 0.17) [2,6,8].

Early feeding interventions play a key role in the growth and development of preterm infants. Nutrients provided through breast milk or specialized formulas enhance infants' weight gain, linear growth, and cognitive development. Research indicates that adequate caloric and protein intake during the early months can improve long-term health outcomes in preterm infants. Providing high protein (≥3.5 g/kg/day) and energy (≥120 kcal/kg/day) in the first week improves cognitive outcomes at 18 months of age (MDI +8.2 points/g protein). The balance of micronutrients and vitamins is also critical—for example, calcium (500–1000 mg/day) and vitamin D (400–800 IU/day) increase bone mineralization (SMD 0.12, $p<0.05$) [3,6,11].

Aim of the study: To conduct a hygienic analysis of the nutritional status of post-term infants..

The object of study: The analysis data were obtained from the Department of Neonatal Diseases at the Multidisciplinary Clinic of the Tashkent Medical Academy, focusing on the actual nutritional status of preterm infants undergoing treatment..

Materials. The actual nutritional status of post-term infants hospitalized in the Department of Neonatal Diseases at the Multidisciplinary Clinic of the Tashkent Medical Academy was studied using specially developed questionnaire surveys. A total of 94 infants were included in the study, of whom 58 (61.7%) were male and 36 (38.3%) were female.

1-table Analysis of the Nutritional Status of Post-Term Infants

Nutritional Indicators	**n**	**%**
Type of Feeding		
Artificial (without breast milk)	16	32,00%
Mixed (breast milk + other foods)	34	68,00%
Breastfeeding		
Breast milk (up to 1 year)	21	42,00%
Breast milk (up to 2 years)	29	58,00%

Web of Medicine: Journal of Medicine, Practice and Nursing
webofjournals.com/index.php/5

Feeding Frequency		
Feeds 1–4 times per day	16	34,00%
Feeds 5–6 times per day	29	58,00%
Feeds 6 or more times per day	5	10,00%
Complementary Feeding		
Complementary feeding (before 6 months)	29	58%
Complementary feeding (after 6 months)	21	42%
Consumption of Food Products		
Consumption of milk and dairy products below normal	10	20%
Consumption of meat and meat products – below the recommended level.	16	32%
Consumption of legumes – below the recommended level.	11	22%
Consumption of vegetables and fruits – below the recommended level.	9	18%
Consumption of bread, grains, and cereals – above the recommended level.	24	48%
Consumption of salt and sugar-containing products above the recommended l	18	36%

According to the data presented in Table 1, among post-term infants, 16 (32%) were fed artificially, meaning that from birth they were nourished not with breast milk but with special substitute formulas. Meanwhile, 34 infants (68%) were fed in a mixed manner, that is, with both breast milk and additional complementary foods.

A total of 21 infants (42.0%) were breastfed up to 1 year of age, while 29 infants (58.0%) continued breastfeeding up to 2 years of age.

Analysis of the frequency of daily feeding among post-term infants showed that 16 infants (32%) were fed 1–4 times per day, 31 infants (62%) — 5–6 times per day, and 6 infants (6%) were fed more than 6 times daily.

Regarding complementary feeding, 29 infants (58%) began receiving supplementary foods before 6 months of age, while 21 infants (42%) started complementary feeding after 6 months.

In terms of food consumption, 10 infants (20%) consumed milk and dairy products below the recommended level; 16 infants (32%) — meat and meat products below normal; 11 infants (22%) — legumes below normal; 9 infants (18%) — fruits and vegetables below normal; and 24 infants (48%) — cereals, bread, and grains below the recommended level. Additionally, 18 infants (36%) consumed foods containing salt and sugar above the physiological norm (Table 1).

Conclusion

The results of the study indicate that the majority of post-term infants were on mixed feeding and did not receive exclusive breastfeeding during the early period of life. Furthermore, irregularities were observed in the frequency of feeding. A significant portion of the infants consumed major food products below physiological norms, while the intake of foods high in hidden sugars and salt exceeded recommended levels. These factors may lead to physiological imbalances and potentially cause deviations in both mental and physical development among post-term infants.

Web of Medicine: Journal of Medicine, Practice and Nursing
webofjournals.com/index.php/5

REFERENCES

1. Эрматов Н. Ж. и др. Гижжа касалликларининг болалар саломатлигига таъсирини гигиеник жиҳатдан таҳлил қилиш. – 2024.
2. Adamkin D. Nutritional Strategies for the Very Low Birthweight Infant. Cambridge: Cambridge University Press, 2009. 191 c. DOI: 10.1017/CBO9780511605444.
3. Agostoni C., Buonocore G., Carnielli V. Enteral nutrient supply for preterm infants: Commentary from the European Society for Paediatric Gastroenterology, Hepatology, and Nutrition Committee on Nutrition // Journal of Pediatric Gastroenterology and Nutrition. 2010. Vol. 50, № 1. P. 1–9.
4. Bala F.E., McGrattan K.E., Valentine C.J., Jadcherla S.R. A Narrative Review of Strategies to Optimize Nutrition, Feeding, and Growth among Preterm-Born Infants: Implications for Practice // Advances in Nutrition. 2024. Vol. 15, № 11. P. 100305. DOI: 10.1016/j.advnut.2024.100305.
5. De Rose D.U., Maggiora E., Maiocco G., Morniroli D., Vizzari G., Tiraferri V., Coscia A., Cresi F., Dotta A., Salvatori G., Giannì M.L. Improving growth in preterm infants through nutrition: a practical overview // Frontiers in Nutrition. 2024. Vol. 11. P. 1449022. DOI: 10.3389/fnut.2024.1449022.
6. Embleton N.E., Pang N., Cooke R.J. Postnatal malnutrition and growth retardation: an inevitable consequence of current recommendations in preterm infants? // Pediatrics. 2001. Vol. 107, № 2. P. 270–273. DOI: 10.1542/peds.107.2.270.
7. Fewtrell M.S. Does early nutrition program later bone health in preterm infants? // The American Journal of Clinical Nutrition. 2011. Vol. 94, № 6, Suppl. P. 1870S–1873S. DOI: 10.3945/ajcn.110.000844.
8. Makrides M., Gibson R.A., McPhee A.J., Collins C.T., Davis P.G., Doyle L.W., Simmer K., Colditz P.B., Morris S., Smithers L.G., Willson K., Ryan P. Neurodevelopmental outcomes of preterm infants fed high-dose docosahexaenoic acid: a randomized controlled trial // JAMA. 2009. Vol. 301, № 2. P. 175–182. DOI: 10.1001/jama.2008.945.
9. Ortiqov B. B., Baxtiyorova G. R., Tugilova S. N. ANALYSIS OF THE MAIN RISK GROUP PRODUCTS IN THE DAILY DIET OF TEKSTIL ENTERPRISES'EMPLOYEES. – 2024.
10. Sisk P., Lovelady C., Dillard R., Gruber K., O'Shea T. Early human milk feeding is associated with a lower risk of necrotizing enterocolitis in very low birth weight infants // Journal of Perinatology. 2007. Vol. 27, № 7. P. 428–433. DOI: 10.1038/sj.jp.7211758.
11. Stephens B.E., Walden R.V., Gargus R.A., Tucker R., McKinley L., Mance M., Nye J., Vohr B.R. First-week protein and energy intakes are associated with 18-month developmental outcomes in extremely low birth weight infants // Pediatrics. 2009. Vol. 123, № 5. P. 1337–1343. DOI: 10.1542/peds.2008-0211.

Web of Medicine: Journal of Medicine, Practice and Nursing
webofjournals.com/index.php/5