

Research Article

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[Maltodextrin Use in Persistent Neonatal Hypoglycemia: Audit Report of a Single Center Experience](#)

Background: Neonatal hypoglycemia is known to cause significant neuronal damage and poor neurodevelopmental outcomes. Consensus guidelines are lacking for the management of persistent neonatal hypoglycemia and hyperinsulinism which often requires high concentrations of dextrose and medications. Although used in the pediatric population with persistent hypoglycemia, only a few case reports are published regarding the use of Maltodextrin supplementation in persistent neonatal hypoglycemia due to transient hyperinsulinism.

Objective: To audit the use of Maltodextrins in the management of persistent neonatal hypoglycemia due to transient hyperinsulinism in neonates.

Audit design: A retrospective chart review (CERNER electronic data) of all cases with persistent neonatal hypoglycemia who received Maltodextrin supplementation for a period of 3½ years between July 2018 and December 2021.

Results: A total of 18 neonates received Maltodextrin supplementation for neonatal hypoglycemia during the audit period. 16/18 (89%) neonates who received Maltodextrin supplementation were weaned off from intravenous dextrose within 1 week without major side effects or severe rebound hypoglycemia. Two out of 18 babies who received Maltodextrin needed Diazoxide supplementation for persistent hypoglycemia.

Conclusion: The results of our audit are promising, yet further research and randomized controlled studies are needed to systematically evaluate the findings of this audit regarding Maltodextrin supplementation for the management of neonatal hypoglycemia with transient hyperinsulinism.

Research Article

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[Medical Examinations of Children and Adolescents to Fulfill the Sports Standards of the “Ready for Labor and Defense” Complex](#)

Introduction: The organization of medical support for the implementation of the standards of the All-Russian physical culture and sports complex “Ready for Labor and Defense” (“RLD”) in children’s clinics on the territory of the Republic of Komi (RK) is carried out in order to develop a physical culture among the population.

Patients and methods: The analysis of the results of 2652 medical examinations of children and adolescents to comply with the standards of the “RLD” in the State budgetary healthcare institution of the Republic of Komi “Syktyvkar Children’s Clinic No. 3” (“SChCI No. 3”) in 2016-2022 was carried out. The significance of differences in quantitative characteristics between groups with a normal distribution of quantitative variables was calculated using Student’s t-tests for independent samples. The threshold value of the probability of error for statistically significant differences was set at a level equal to 0.05. The frequency ratio was calculated per 10,000-child population. The depth of the study was 7 years.

Results: Among patients who applied for examination only 2604 people (98.85 ± 0.21%) were allowed to pass sports standards. The FC of those who applied was 138.44 per 10,000 children, and the FC of those admitted was 135.94. The proportion of patients of “SChCI No. 3”, who were assigned the main medical group for physical education ranged over the years from 87.37 ± 1.47% in 2017 to 98.86 ± 0.34% in 2019 and on average for 7 years amounted to 94.19 ± 0.45%. That is, almost 90% of those examined are children without health and physical development disorders, but with possible functional disorders that do not lag behind their peers in physical development and physical fitness. They are allowed to study in full according to the curriculum of physical education using preventive technologies, preparation, and passing tests of individual physical fitness.

Conclusion: The average annual quantitative indicator of those who applied for certification to pass the standards of the “RLD” is a statistical tool, on the one hand, to determine the current and future workload of medical personnel and determine the forces and means of medical support, on the other hand, an indirect indicator of the interest of children and adolescents in systematic physical education and sports, instilling in schoolchildren the skills of a healthy lifestyle and the prospects for the physical development of the nation. The frequency of examinations per 10,000 of the child population should be considered as an indirect marker for assessing the physical development of children and adolescents since it is not the result of a continuous, but only selective (at the request of those who applied) research. The voluntary surrender of the “RLD” standards by children and adolescents should be approached as an indicator of physical readiness and high personal self-esteem, including psychological readiness for competitive relations in the school and adolescent environment and psychological maturity.

[Factors Associated with Elevated Transcranial Doppler Ultrasound Velocities in Children With Sickle Cell Anemia in Mwanza, Tanzania](#)

Background: Stroke occurs in 11% of patients with SCA before 20 years of age. In Northwestern Tanzania, the prevalence of stroke among children living with SCA under the age 15 years is 16.9%, of which might be attributed to the absence of routine screening for the risk of stroke by using Transcranial Doppler Ultrasound (TCD). Screening with TCD allows preventive measures such as chronic blood transfusion to be done which has led to the reduction of stroke by 92%.

Methods: This was a prospective analytical cross sectional study which enrolled 267 SCA children aged 2 to 16 years attending Bugando Medical Centre Pediatric Sickle Cell Clinic from July 2019 to June 2020. Assessment of factors associated with elevated TCD included a clinical history of stroke in sibling, death in sibling, temperature, oxygen saturation in room air, blood pressure, hemoglobin level and total white blood cell count. TCD was done by accessing transtemporal window and recording the highest time average mean of maximum velocity (TAMMV) of major vessels mainly, middle cerebral artery (MCA) and distal internal carotid artery (dICA).

Results: The median age of enrolled was 6.6 (IQR: 4-9) years. The prevalence of elevated TCD (> 170 cm/s) was found to be 21% (56/267). By multivariate logistic regression, low oxygen saturation in room air, p - value = 0.037, OR 1.08 [95% CI 1.00-1.17] and low hemoglobin level, p - value = 0.001, OR 1.76 [95% CI 1.26-2.45] were statistically significantly associated with elevated TCD among children living with SCA.

Conclusion: The high prevalence of elevated TCD velocity, with low hemoglobin and low oxygen saturation in room air as associated factors under multivariate logistic regression, warrants routine TCD screening for children with SCA aged 2 to 16 years.
