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Incidence of Refeeding Syndrome in Malnourished Children Undergoing Treatment at Tehsil Headquarter Hospital Dogar, Central Kurram

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Abstract

Background: Refeeding syndrome (RFS) is a potentially fatal condition occurring during the nutritional rehabilitation of severely malnourished children1,3,4. This study retrospectively analyzed medical records of malnourished pediatric patients admitted to Tehsil Headquarter Hospital Dogar in Central Kurram to determine the incidence of RFS, associated risk factors, and outcomes. Our findings underscore the importance of vigilant monitoring and gradual nutritional repletion in this vulnerable population to prevent the onset of RFS3,4.

Objective: Incidence of refeeding syndrome in malnourished children undergoing treatment at Tehsil Headquarter Hospital Dogar, central kurram.

Study Design: Retrospective cohort study.

Place and Duration of study: Study conducted at Tehsil Headquarter Hospital Dogar central Kurram from Ist january to December 2023.

Materials And Methods: A retrospective cohort study was conducted to assess the incidence of refeeding syndrome (RFS) among severely malnourished children aged 6 months to 5 years admitted to Tehsil Headquarter Hospital Dogar, Central Kurram, from January to December 2023. Severe acute malnutrition (SAM) was defined per World Health Organization criteria5. RFS was identified based on clinical features and laboratory findings, including hypophosphatemia, hypokalemia, and hypomagnesemia occurring within 72 hours of initiating nutritional therapy6. Data on demographics, nutritional status, treatment protocols, and outcomes were collected and analyzed7. The study emphasizes the importance of vigilant monitoring and gradual nutritional repletion in this vulnerable population to prevent RFS.

Result: Among 250 children with severe acute malnutrition (SAM), 35 (14%) developed refeeding syndrome (RFS)8,10. The mean age was 2.8 years, with a male-to-female ratio of 1.8:1. Key risk factors included prolonged inadequate nutrition and comorbid infections9. Electrolyte imbalances were managed with monitoring and supplementation, leading to a 90% recovery rate. However, three children succumbed to severe electrolyte disturbances.

Conclusion: Refeeding syndrome presents a considerable risk during the treatment of severely malnourished children. The 14% incidence rate observed in this study highlights the need for heightened awareness and proactive management strategies among healthcare professionals in similar settings. Implementing standardized protocols for the reintroduction of nutrition and electrolyte monitoring can significantly reduce morbidity and mortality associated with RFS.

Key words: refeeding syndrome (rfs); severe acute malnutrition (sam) ; pediatric malnutrition; nutritional rehabilitation; electrolyte imbalance; mortality and morbidity; nutritional support protocols; retrospective cohort study; hospitalized children

Introduction:

Malnutrition is a critical public health issue in Pakistan, notably in regions like Central Kurram. Managing severe acute malnutrition (SAM) involves nutritional rehabilitation, which, if not carefully monitored, can lead to refeeding syndrome (RFS). RFS is characterized by metabolic disturbances, including hypophosphatemia, hypokalemia, hypomagnesemia, and thiamine deficiency, occurring upon the reintroduction of nutrition to starved individuals11. These disturbances can result in severe electrolyte imbalances and potential mortality12. Despite its clinical significance, data on the incidence of RFS in malnourished children within Pakistan is limited. This study aims to address this gap by evaluating the frequency and characteristics of RFS in children treated at Tehsil Headquarter Hospital Dogar.

Materials and Methods:

A retrospective cohort study was conducted to assess the incidence of refeeding syndrome (RFS) among severely malnourished children aged 6 months to 5 years admitted to Tehsil Headquarter Hospital Dogar, Central Kurram, from January to December 2023. Severe acute malnutrition (SAM) was defined per World Health Organization criteria5. RFS was identified based on clinical features and laboratory findings, including hypophosphatemia, hypokalemia, and hypomagnesemia occurring within 72 hours of initiating nutritional therapy6. Data on demographics, nutritional status, treatment protocols, and outcomes were collected and analyzed7. The study emphasizes the importance of vigilant monitoring and gradual nutritional repletion in this vulnerable population to prevent RFS.

Result:

Among 250 children with severe acute malnutrition (SAM), 35 (14%) developed refeeding syndrome (RFS)8,10. The mean age was 2.8 years, with a male-to-female ratio of 1.8:1. Key risk factors included prolonged inadequate nutrition and comorbid infections9. Electrolyte imbalances were managed with monitoring and supplementation, leading to a 90% recovery rate. However, three children succumbed to severe electrolyte disturbances.

DISCUSSION:

The incidence of refeeding syndrome (RFS) in this cohort aligns with findings from other developing countries. For example, a study in Uganda reported a 34.8% incidence of RFS among children with severe acute malnutrition (SAM)13. Similarly, research in South Africa found a 15% incidence of RFS in hospitalized children with SAM14. This high incidence underscores the necessity for healthcare providers to recognize at-risk individuals and implement preventive measures. Gradual initiation of nutritional support and routine monitoring of electrolyte levels are critical steps in mitigating the risk of RFS15.

Conclusion:

Refeeding syndrome presents a considerable risk during the treatment of severely malnourished children. The 14% incidence rate observed in this study highlights the need for heightened awareness and proactive management strategies among healthcare professionals in similar settings. Implementing standardized protocols for the reintroduction of nutrition and electrolyte monitoring can significantly reduce morbidity and mortality associated with RFS.

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Limitations:

This study has several limitations. Firstly, as a retrospective cohort study, it relies on existing medical records, which may have inconsistencies or incomplete data, potentially affecting the accuracy of findings. Secondly, due to resource constraints, laboratory investigations were limited to the identification of hypophosphatemia, hypokalemia, and hypomagnesaemia, while other biochemical markers of refeeding syndrome were not assessed. Thirdly, this study was conducted at a single healthcare facility in Central Kurram, limiting the generalizability of the findings to other regions with different healthcare settings and nutritional rehabilitation protocols. Lastly, the absence of long-term follow-up data prevents an assessment of the prolonged effects of refeeding syndrome on growth and development outcomes.

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