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PRESCRIBING ERRORS IN PARENTERAL NUTRITIONAL SUPPORT FOR ADOLESCENT PEDIATRIC PATIENT

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Background and importance

ADOLESCENTS represent one of the pediatric populations at highest risk for medication errors (ME) due to individualized dose calculations based on weight, a parameter with high variability in this pediatric age. Pharmacist intervention may be essential to reduce ME in PARENTERAL NUTRITION (PN), especially in weights greater than 40 kilograms (kg) as indicated in the literature, to make sure that the maximum recommended dose is not exceeded.

Aim and objectives

ANALYZE

Pharmaceutical interventions accepted by the prescribing physician

ADOLESCENT + PN

ME macro/micronutrient doses > maximum recommended

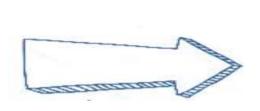
Interventions
patients weight ≤ 40kg
patients weight > 40kg

COMPARE

Material and methods

Observational, descriptive and retrospective study + From between January 2022 and May 2024 + Tertiary care hospital

Adolescents (13-17 years) who received PN



Variables

age, gender, weight, number of PN, type of intervention, macro/micronutrients adjusted.

Qualitative variables was expressed as numbers and percentages (%). Quantitative variables were expressed as mean ± standard deviation (SD).

* Interventions to adjust osmolarity or stability of the lipid emulsion were excluded.

Results

ADOLESCENT + PN



20 (53%) male



14.4 (1.3) years

717 PN validated by hospital pharmacist



ADOLESCENT + PN ≤ 40kg



27.8 (7.8) kg





7 Pharmaceutical interventions

0 macro/micronutrient
doses > maximum recommended

ADOLESCENT + PN > 40kg



55.9 (7.8) kg



608 PN

67 Pharmaceutical interventions

20 (30%) macro/micronutrient doses > maximum recommended in 15 (48%) patients

Most adjusted macronutrients: **GLUCOSE**

Most adjusted micronutrients: Mg, Ca, P

Conclusion and relevance

This study suggests that in nutritional therapy, patients weighting over 40 kg are more likely to experience dosing errors in both micronutrients and macronutrients. This underscores the critical importance of hospital pharmacists' involvement and integration within the nutrition management team to ensure the accuracy and safety of nutritional preparations, particularly for adolescent patients who require specialized considerations.

