Predictors of Wasting by the Age of 1 Year Among Infants under 6 Months Enrolled in a MAMI Program in Cox's Bazar Refugee Camp

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Background and Study Design

Primary Objective: to identify risk factors associated with the onset of acute malnutrition by the age of 1 year among infants enrolled in MAMI program

- Observational and longitudinal study

- Infants enrolled in MAMI and once discharged, were followed until the age of 12 months for the occurrence of acute malnutrition (from the age >6 months all children admitted in BSFP)

- Enrollment Period : January 2020– April 2021

- Last follow-up: March 2022

*Legenda:

MAMI – Management of At-Risk Mothers and Infants

WAZ – Weight for Age Z Score

MUAC – Middle Upper Arm Circumference

BSFP – Blanket Supplementary Feeding Program

WHZ – Weight for Height Z Score

LNS – Lipid Nutrient Supplementation

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Patients & Methods

Variables measured

o Weight and Age at admission/discharge (calculation of WAZ)

o MUAC at admission and at different time points: discharge from MAMI program, 6 months, 9 months and 12 months of age

Acute malnutrition for children between 6 months and 1 year was defined as MUAC <125 mm (to diagnose global acute malnutrition - GAM)

Data obtained for 497 children

• **246** enrolled with a WAZ<-2 Z score ('**WAZ**' Group)

• **251** enrolled for breastfeeding problems ('**OTHERS**' Group)

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Patient Characteristics - Results

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Group ALL	Total	WAZ	OTHERS
N	497	246	251
Female # (%)		133 (54.1%)	132 (52.6%)
GAM # (%)	101	66 (26.8%)	35 (13.9%)
SAM # (%)	11	8 (3.3%)	3 (1.2%)
Age Adm Days		62.1 (42.4)	51.5 (35.9)
Age Disc Days		132.5 (55.6)	115.2 (49.3)
MUAC Admis cm (SD)		10.6 (1.1)	11.5 (1.0)
MUAC Disc cm		12.2 (1.0)	12.8 (1.0)

'WAZ' vs 'OTHERS'
P=0.007
OR=2.59
(1.4-4.8)

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Results – Analysis 'WAZ' Group

WAZ Group	Total	GAM	No GAM	Univariate Analysis	Multivariate Analysis	OR (95% CI)
WAZ	246	66	180	P<0.001	P=0.007	2.59 (1.39-4.80)
Male # (%)	113	26 (39.4%)	87 (48.3%)	P=0.213	P=0.024	0.41 (0.19-0.89)
Age Adm Days (SD)		90.9 (49.2)	51.2 (33.7)	P<0.001	P=0.011	0.98 (0.97-0.99)
MUAC Admission cm (SD)		10.8 (0.8)	10.5 (1.2)	P=0.063		

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Discussion

1. 'WAZ group' was more prone to develop acute malnutrition by the age of 1 year, compared to 'OTHERS group'

2. 'WAZ' Infants enrolled in MAMI at an early age (<2 months) showed a significant less risk of developing acute malnutrition later in life

3. Female sex was associated with increased development of acute malnutrition by the age of 1 year (seen in both 'WAZ and OTHERS')

Limitations

- Small sample size & short follow-up period (better till 2 years of age)
- WHZ not measured due to COVID-19 restrictions in the Camp

Conclusions

1. Effective early screening at community level of infants – as early as possible (ideally before the age of 2 months) to identify those in need of MAMI support (WFA<-2 Z), may reduce their risk of developing acute malnutrition beyond the age of 6 months

2. The use of 'MUAC only' for the diagnosis of acute malnutrition in the children >6 months until 1 year of age could have favored the detection of female patients over male patients (MUAC has been seen to more sensitive for younger female patients)

3. **Question for reflection not addressed by the present study**: is it advisable to provide some form of specialized supplementation (eg: LNS as seen in previous studies) to the 'WAZ' infants discharged from MAMI, starting from the age of 6 months, to mitigate the risk of future acute malnutrition ?

Thanks

We would like to thank   for the critical contribution to this study