



TO STUDY AND COMPARE THE EFFECTS OF CLINICAL PARAMETERS IN PATIENTS WITH SEVERE ACUTE MALNUTRITION WITH SUSPECTED SEPSIS.

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ABSTRACT

Sepsis in patients with severe acute malnutrition may not always be associated with classical signs of infection hyperthermia, diarrhea, respiratory illness, urinary tract infections. Some otherwise non obvious clinical signs may sometimes be the clue to an underlying infection in patients with severe acute malnutrition. Prompt recognition of these signs and early intervention may result in a significantly improved outcome. **Material and methods :** In this study 72 children aged 6 months-60 months, classified as SAM children as per WHO criteria were with obvious signs of infections such as hyperthermia, diarrhea, respiratory illness, urinary tract infections or with non obvious signs of infections such as hypothermia, poor oral acceptance, hypoglycemia are included in the study. Patients were divided into groups on the basis of presence or absence of clinical parameters and analysed. **Results and conclusion :** Of the parameters included in our study, decreased oral acceptance was the most commonly associated parameter which was present in 54.16 percent of the study population. Blood cultures were positive in 41.66% of the patients. Followed by others parameters which were less commonly involved like diarrhea (34.72%), hurried breathing (26.38%), fever (20.83%) and edema (5.55%) indicating that sepsis in patients with severe acute malnutrition may have diverse presentations and associations and may not necessarily be associated with classical signs of infection.

KEYWORDS :

INTRODUCTION :

Severe acute malnutrition (SAM) defined by a very low weight for height (below -3z scores of the median WHO growth standards), is a devastating public health problem of epidemic proportions. It is one of the leading causes of morbidity and mortality in childhood. Children with severe malnutrition are at risk of several life threatening problems like hypoglycemia, hypothermia, serious infections and severe electrolyte imbalance. (1),(2),(3).

Malnourished children suffer in greater proportion from respiratory infections, infectious diarrhea, measles, and malaria, characterized by a protracted course and exacerbated disease.(4),(5),(6),(7). Sepsis in patients with severe acute malnutrition may not always be associated with classical signs of infection such as hyperthermia, diarrhea, respiratory illness, urinary tract infections. Some otherwise non obvious clinical signs may sometimes be the clue to an underlying infection in patients with severe acute malnutrition. Prompt recognition of these signs and early intervention may result in a significantly improved outcome.(8) We undertook this study to asses and compare the effects of some of the clinical signs in patients of severe acute malnutrition with sepsis.

MATERIAL AND METHODS :

In this study 72 children aged 6 months-60 months, classified as SAM children as per WHO criteria were admitted in pediatrics ward with obvious signs of infections such as hyperthermia, diarrhea, respiratory illness, urinary tract infections or with non obvious signs of infections such as hypothermia, poor oral acceptance, hypoglycemia are included in the study. Children aged below 6 months and above 60 months and whose parent/patient not giving consent were excluded.

Definition: The assessment of nutritional status as per WHO guidelines is done according to:

1. Weight for Height (length)
2. Height (or length) for Age, and
3. Presence of Edema.

As per the WHO Classification, SAM is defined as a score of less than -3 SDS (standard deviation score) where SDS is defined as the deviation of the value for an individual from the median value of reference population divided by standard deviation of standard reference population.

Patients were divided into groups on the basis of presence or absence of clinical parameters like

- 1) Edema
- 2) Hurried breathing
- 3) Diarrhea
- 4) Fever
- 5) Decreased oral acceptance
- 6) Blood culture results.

And outcome was observed and compared.

OBSERVATIONS AND RESULTS :

TABLE - 1 Edema and outcome

EDEMA	Death (n = 3)	% Death	Discharge (n=69)	% discharge
Absent	3	100.0	65	94.2
Present	0	0.0	4	5.8

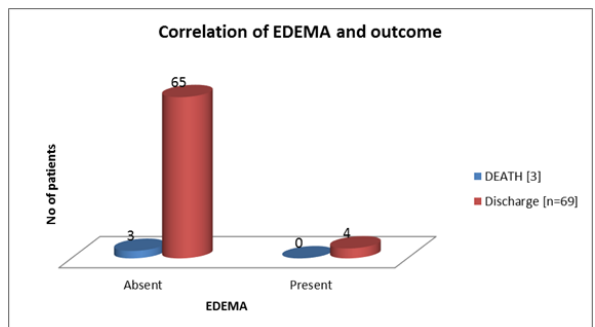


TABLE - 2 Hurried Breathing and Outcome

Hurried Breathing	Death (n = 3)	% Death	Discharge (n=69)	% discharge
Absent	1	33.3	52	75.4
Present	2	66.7	17	24.6

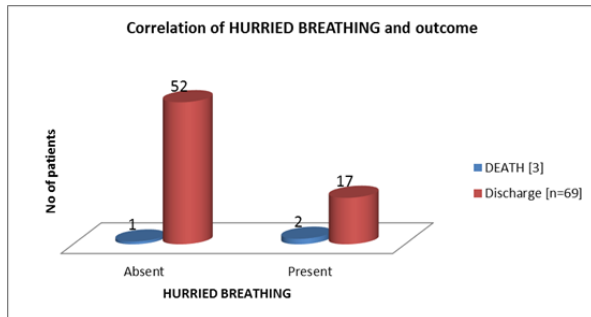


TABLE - 3 Diarrhoea and Outcome

Diarrhoea	Death (n = 3)	% Death	Discharge (n=69)	% discharge
Absent	3	100.0	44	63.8
Present	0	0.0	25	36.2

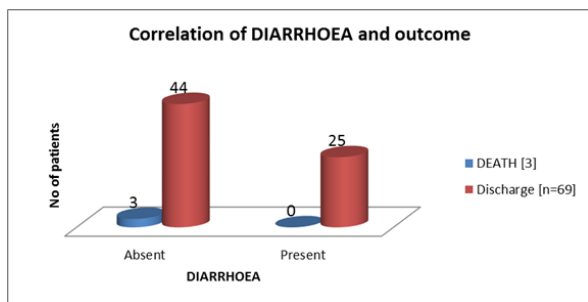


TABLE - 4 Fever and Outcome

Fever	Death (n = 3)	% Death	Discharge (n=69)	% discharge
Absent	3	100.0	54	78.3
Present	0	0.0	15	21.7

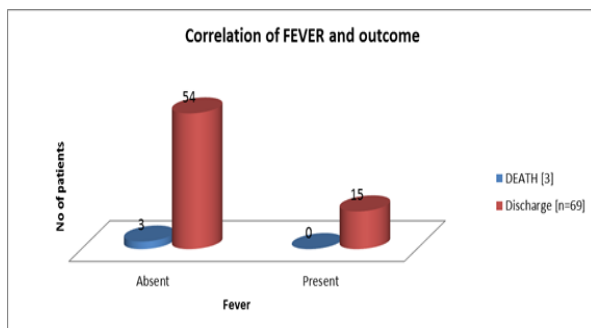


TABLE - 5 Decreased Oral Acceptance and outcome

Decreased Oral Acceptance	Death (n = 3)	% Death	Discharge (n=69)	% discharge
Absent	0	0.0	33	47.8
Present	3	100.0	36	52.2

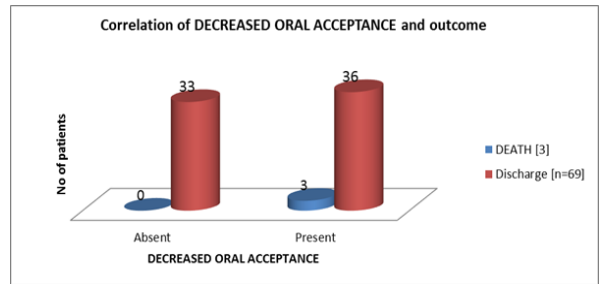
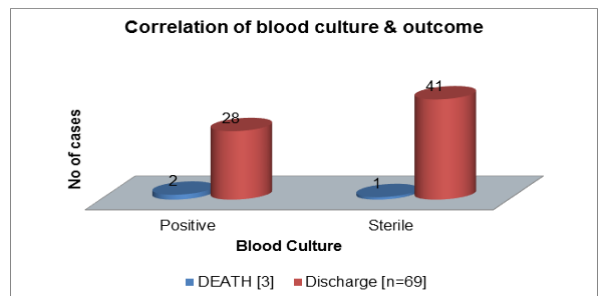


TABLE - 6 Blood culture and outcome

Blood Culture	Death (n=3)	% Death	Discharge (n=69)	% discharge
Positive	2	66.7	28	40.6
Sterile	1	33.3	41	59.4



1) Edema was present in 4/72 patients (5.55%). Of the patients died none had edema and only 5.8% (4/69) of the discharged patients had presence of edema on admission.(p>.05)

2) Hurried breathing was present in 19/72 (26.38%) of our study population. Patients who died 66.67% (2/3) had complaint of hurried breathing on admission, whereas 24.6% (17/69) of patients in discharge group had hurried breathing on admission.(p>.05)

3) Diarrhea was present in 25/72 (34.72%) of our study population indicating diarrhoea to be a commonly associated problem in patients with SAM. In the patients died none had complain of diarrhoea on admission in comparison to discharge group where 36.2% (25/72) of patients were admitted for complain of diarrhoea.(p>.05)

4) Patients who died none was admitted for complaint of fever, but in the discharge group 21.7% (15/69) of patients had fever on admission(p>.05).

5) 39/72 (54.16 %) of our study population had a poor oral acceptance on presentation. Patients that died all 100% (3/3) were admitted for complaint of decreased oral acceptance, whereas in discharged patients 52.2% (36/69) had decreased oral acceptance.(p>.05).

6) Coming the outcome of patients with respect to cultures, in our study of the total number of deaths, 66.7% (2/3) were culture positive and 33.3% (1/3) were sterile. In discharged patients, 40.6% (28/69) were culture positive and 59.4% (41/69) had their culture results as sterile. Reed et al9 (1996) found in their study the case fatality rate for bacteraemic children was (22.6%) significantly greater than in those without bacteraemia (9.3%).

DISCUSSION:

Edema was present in 4/72 patients (5.55%). All the patients who had edema had a favourable outcome in our study and were discharged. Hurried breathing was present in 19/72 (26.38%) of our study population. 2/19 (10.52%) of the patients with hurried breathing had an unfavourable outcome as compared to 1/53 (1.88%) who did not had hurried breathing indicating that hurried

breathing could be regarded as an unfavourable sign in patients with SAM. Diarrhea was present in 25/72 (34.72%) of our study population indicating diarrhea to be a commonly associated problem in patients with SAM. Out of the 25 patients with diarrhea, none had an unfavourable outcome. Fever was present in 15/72 (20.83%) of our study population. Patients who died none was admitted for complaint of fever, but in the discharge group 21.7% (15/69) of patients had fever on admission ($p > .05$). 39/72 (54.16%) of our study population had a poor oral acceptance on presentation. All the patients who had an unfavourable outcome in our study had decreased oral acceptance. Coming the outcome of patients with respect to cultures, in our study of the total number of deaths, 66.7% (2/3) were culture positive and 33.3% (1/3) were sterile. In discharged patients, 40.6% (28/69) were culture positive and 59.4% (41/69) had their culture results as sterile. Reed et al⁹ (1996) found in their study the case fatality rate for bacteraemic children was (22.6%) significantly greater than in those without bacteraemia (9.3%).

Of the parameters included in our study, decreased oral acceptance was the most commonly associated parameter which was present in 54.16 percent of the study population. Blood cultures were positive in 41.66% of the patients. Followed by others parameters which were less commonly involved like diarrhea (34.72%), hurried breathing (26.38%), fever (20.83%) and edema (5.55%).

CONCLUSION:

Of the parameters included in our study, decreased oral acceptance was the most commonly associated parameter which was present in 54.16 percent of the study population. Blood cultures were positive in 41.66% of the patients. Followed by others parameters which were less commonly involved like diarrhea (34.72%), hurried breathing (26.38%), fever (20.83%) and edema (5.55%) indicating that sepsis in patients with severe acute malnutrition may have diverse presentations and associations and may not necessarily be associated with classical signs of infection.

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