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Title: Predicting factors of early mortality among severely malnourished children admitted at Vicente Sotto Memorial Medical Center, Cebu City, Philippines.

Key words: Severe Malnutrition, Early Mortality

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Abstract:

Problem Statement/Objective: Severe malnutrition continues to claim lives of many innocent children despite of the availability of WHO guideline that could reduce case fatality rate to as low as below five percent (5%). The CFR of many institutions remains high and a remarkable number of deaths occurred during the 1st 48 hours of hospitalization reaching 33% of the total deaths. This study aims to identify the specific risk factors affecting early mortality of severely malnourished patient admitted at VSMC, Cebu City, Philippines from January 1, 2004 to June 30, 2009.

Methods: A cross sectional study where in hospital records of patients diagnosed with severe malnutrition were retrieved. The variables considered were dichotomized and crude analysis on the relationship between each of the study variables and early mortality was determined. Stratified and stepwise logistic regression analyses were done on selected variables.

Findings: There were 244 (53.6%) males and 212 (46.5%) females. Ages ranged from three (3) to 57.5 months old (MEAN±SD:19.2±11.2 mos.). More than half (66%) of the patients were below 2 years old. The most common cause of seeking medical attention was diarrhea and the most common co-morbidity was pneumonia.

The 19 variables considered in the study were dichotomized and the crude Odds Ratio was obtained for each variable. Among the 19 variables, only six (6) showed significant association with early mortality ($p < 0.05$): intravenous fluid (OR=14.26), general danger sign (OR=6.3), prolonged CRT (OR=5.69), and referral with intravenous fluid (OR=2.36), administration of antibiotic within six (6) hours from admission (OR=0.45), and exclusive breastfeeding (OR=0.50)

The six (6) variables with significant association to early mortality ($p < 0.05$) were examined for confounding and effect modification by stratified analysis. Co-morbidity was included in the stratified analysis and in the succeeding stepwise logistic regression analysis because of the magnitude of its crude OR (4.53) and its constant association with mortality in severely malnourished children in previous studies, despite the test of association did not find it statistically significant (95% CI: 0.62, 93.75; $p = 0.11$). The stratified analysis showed that CRT and antibiotic were effect modifiers but the interaction was not significant when regression analysis was done.

When stepwise logistic regression analysis was performed, five variables were left in the model. Of these five (5) variables, exclusive breastfeeding and antibiotic have protective effect while intravenous fluid, general danger sign and prolonged CRT are related to increased risk of early mortality.

Discussion and Conclusion: The five (5) parameters retained in the logistic regression analysis model such as exclusive breastfeeding, antibiotic administration, Intravenous fluid infusion, general danger sign and prolonged CRT are the predictors of early mortality found in this study. These parameters are all addressed in the IMCI guidelines in the management of severely malnourished children. Therefore, when a health worker is confronted with a severely malnourished child presenting any of these findings, the chance of survival is great if adherence to the guidelines is practiced. Some findings of this study needs follow up research as there are no sufficient literatures to support these findings.