CORRESPONDENCE

Validity of the Vesikari Score for the Assessment of Pediatric Acute Gastroenteritis in Correlation with Nutritional and Socioeconomic Influences

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To the Editor: We recruited 348 infants/children (2 mo–5 y) with acute gastroenteritis at the Children's Hospital, Cairo University, Cairo. Children with food allergies, malabsorption syndromes, inborn errors of metabolism, chronic diseases, and congenital GIT malformations were excluded. We compared the Vesikari Clinical Scoring System (VCSS) [1] to the WHO dehydration score [2] in correlation to malnutrition and socioeconomic status (SES) classified by El-Gilany modified score [3].

Recruited infants/children were 14.7 ± 12.6 mo old and 211/348 (60.6%) were boys; 193 (55.5%) were breast-fed, 107 (30.7%) were artificially fed, and 48 (13.8%) were both. Fifteen families (4.3%) were categorized as very-low-SES quartile, 206 (59.2%) as low, 121 (34.8%) as moderate, and 6 (1.7%) as high. A total of 195 families (56%) lived in urban areas, 126 (36.2%) lived in slums, and 27 (7.8%) lived in rural areas. There were 74.4% families that had pure water supply and sanitary sewage system. In 63.6% families, both parents were educated; 18.3% had one educated parent, and in 18.1% both were illiterate. Children having normal weight and height were 73.9% and 69.3%, respectively, while 26% had wasting according to WHO z scores; 68/221 (30.1%) with lower SES (very low and low quartiles) had wasting, while 23/127 (18.1%) with higher SES (moderate and high quartiles) had wasting ($p = 0.012$).

At presentation, 35 (10%) were lethargic, 112 (32.2%) had sunken eyes, 18 (5.2%) had very slow skin pinch, and 19 (5.5%) drank poorly. Using the WHO dehydration score, 39 (11.2%) had severe dehydration, 75 (21.6%) had mild dehydration, while 234 (67.2%) had no dehydration. Alternatively, using VCSS, gastroenteritis was severe in 256 (73.6%), moderate in 88 (25.3%), and mild in 4 (1.1%). Attack severity by VCSS strongly correlated with the dehydration degree using the WHO dehydration score ($R = 0.372$, $p < 0.0001$). A VCSS of 15/20 or above has the highest area under the ROC curve to detect dehydration with 82% specificity and 53% sensitivity. Through multivariate regression, artificial feeding was a significant predictor of severe diarrhea according to VCSS ($p = 0.023$) and a borderline predictor of severe dehydration by the WHO dehydration score ($p = 0.067$). Residency in slums was a significant predictor of both ($p < 0.0001$).

Although the WHO dehydration score gives a more objective evaluation of dehydrated children, the VCSS has a satisfactory performance. Artificial feeding, stunting, living in slums, and parental illiteracy are important risk factors for acute gastroenteritis severity in Egypt.

Declarations

Conflict of Interest None.

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