Reliability, validity of clinical dehydration scale questioned

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(HealthDay) -- A previously derived clinical dehydration scale (CDS) is characterized by moderate interobserver reliability and weak links with objective measures of disease severity for children administered intravenous rehydration, according to a study published online April 23 in *Pediatrics*.

Laura M. Kinlin, M.P.H., from Dalhousie University in Halifax, Canada, and Stephen B. Freedman, M.D.C.M., from the Hospital for Sick Children in Toronto, investigated the reliability and validity of a previously derived CDS in 226 children (older than 3 months) who required intravenous rehydration at a tertiary care emergency department . Reliability of the scale was assessed by comparing the scores assigned by a trained research nurse and a physician. The validity of the scale was assessed by using parameters indicating disease severity.

The researchers found that interobserver reliability was moderate (weighted κ, 0.52). No association was seen between CDS score and percent weight gain, a proxy measure of fluid deficit, but there were modest and statistically significant associations between CDS score and specific disease parameters (serum bicarbonate and length of stay). The scale's discriminative ability was evaluated for resulting hospitalization and showed an area under the receiver operating characteristic curve of 0.65.

"In children administered intravenous rehydration, the CDS was characterized by moderate interobserver reliability and weak associations with objective measures of disease severity," the authors write. "These data do not support its use as a tool to dictate the need for intravenous rehydration or to predict clinical course."

One of the authors disclosed a financial tie to Baxter Healthcare.

More information: Abstract
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