

Abstracts for conferences presentations

Pillay V, Swingler GH. Reliability and diagnostic accuracy of clinical signs used to assess plasma sodium and potassium disturbances in children with diarrhea. 40th Annual Society for Epidemiological Research Meeting (Massachusetts) 2007

To assess the reliability and diagnostic accuracy of clinical signs of electrolyte disturbances in children with dehydrating diarrhoea we performed a cross-sectional analytic survey of children aged 6 weeks to 2 years admitted to the Rehydration Unit at Red Cross Children's Hospital, Cape Town, South Africa. This study was designed according to the STARD criteria for reporting studies of diagnostic accuracy (Bossuyt et al., Clin Chem., 2003 49[1]: 7-18). Target enrolment for each month was estimated by using the mean proportion of patients admitted to the Rehydration Unit from 1999 to 2001 for each month. Consecutive sampling was done during work hours until target enrolment for each day was met. The clinical signs assessed were applied by the junior medical staff working in the ward who were broadly representative of doctors working in teaching hospitals in areas where dehydrating diarrhoea is prevalent. The clinicians were blind to electrolyte results and electrolyte measurement was performed without knowledge of clinical findings.

In 187 (39.4%) of 475 enrolled patients plasma sodium levels were below 135mmol/l, and 31 (6.5%) above 150mmol/l. In 236 (50.1%) of the 471 patients plasma potassium was below 3.5mmol/l. Likelihood ratios for the tests assessed ranged from 4.3 [95% confidence interval 0.5 to 40.4] to 0.3 [95% confidence interval 0.1 to 1.1]. Reliability expressed as weighted kappa statistic ranged from 1.0 [95% confidence interval 1.0 to 1.0] to -0.13 [95% confidence interval -1.35 to 1.09]. We conclude that the clinical signs assessed were neither useful nor reliable in clinical practice, with a consistent pattern of low accuracy across all tests.