

HYPOKALAEMIA AND URINARY ANOMALIES IN CHILDREN WITH DIARRHOEA IN RURAL BANGLADESH

Pages with reference to book, From 20 To 21

Sir,

Although hypokalaemic nephropathy has alone been recognised^{1,2} the extent of urine in patients with hypokalaemia and diarrhoea has not been well documented. Accordingly, we studied prospectively during March through September, 1982, 280 uncomplicated diarrhoeal children under 5 years of age admitted to a rural treatment centre of the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR, B). Of these, 139 (46%) children were hypokalaemic (Serum K+ < 3.5 mmol/L) and 150 (54%) normokalaemic on admission.

Urine examinations were performed as soon as available for specific gravity using a temperature corrected refractometer (American Optical Corp. Buffalo, New York), presence of protein, red blood cells, pus cells (>2/high bower field regarded as abnormal)³ casts and epithelial cells according to standard procedures⁴. Total urine output was measured for first 24hours after admission. "Z" test was used to compare data between groups.

Hypokalaemic children passed significantly larger volumes of urine with lower concentrations than normokalaemic subjects (Table).

Table Comparison of Children in Hypokalaemic and Normokalaemic Groups.

Characteristics	Hypokalaemia (130)*	Normokalaemia (150)*	P
General			
Age (months) (mean ± SD)	17 ± 11	15 ± 11	NS
Sex (male)	64%	62%	NS
Temperature on admission (>38° C)	20%	18%	NS
Urine			
Output (ml/kg/24 hrs, Mean ± SD)	24 ± 17	17 ± 11	<.001
Specific gravity (Mean ± SD)	1.011 ± .006	1.016 ± .007	<.001
Protein	62%	37%	<.001
Red blood cells	5%	3%	NS
Cast ⁺	45%	37%	NS
Pus cells (>2/MPF)	60%	39%	<.001
Epithelial cells ⁺	36%	30%	NS

*Number of children, + Includes all varieties, NS – Not significant, HPF – High power field.

Significantly higher proportion of hypokalaemic children passed protein and pus cells in the urine than normokalaemic group.

Potassium along with other electrolytes is lost in diarrhoeal stool of all ages but more in cases of children.^{5,6} We found a significant number of children with hypokalaemia (46%) following diarrhoea. Routine analysis of urine during diarrhoea may provide useful information in relation to hypokalaemia. This might be helpful for therapeutic measures in children with diarrhoea.

Yours sincerely,

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