Prescribing Practices of Doctors in Management of Acute Diarrhea

We conducted this study to determine the prescribing practices of doctors in management of acute diarrhea in children in the age group of 6 month -5 year. Antimotility agents and low/zero lactose formula was prescibed in 9.8% and 24.7% cases, respectively by general practitioners.In about 66.6% and 5.7% cases pre/probiotics were prescribed and oral rehydration salt (ORS) were not prescribed by the pediatricians.

Key words: *Diarrhea, India, management, Practices.*

Diarrhea is a leading cause of mortality and morbidity in children, especially in the developing countries, and 19% of the child deaths are attributable to diarrhea [1]. The Sample Registration Survey reported that about 10 per cent of infants and 14 per cent of 0-4-year children die due to diarrhea in India [2]. Most of the childhood acute diarrhea are caused by viral infections and are self limiting in nature, hence antibiotics should be used in selective cases [3]. The Indian Academy of Pediatrics recommends use of oral rehydration salt solution (ORS) in all type of diarrhea along with oral zinc. There is insufficient evidence to recommend probiotics, antimotility and antisecretory drugs like racecadrotil, which may even be harmful [4-6].

600 children (6 month-5year old) suffering from acute diarrhea without dysentery, severe malnutrition or any systemic illness, attending Pediatric outpatient department of our institute between October 2009 to September 2010 were selected. Out of 600, 480 had consulted at least once for this episode of diarrhea. Out of these 480, 92 had visited unquali-fied practioners so they were excluded from the study. Out of remaining 388; 214 and 174 had consulted a general practitioner (GP) (having MBBS degree), and Pediatrician (having MD, DCH, DNB degree), respectively.

Prescribing rate of antibiotics was as high as 88.7% and 74.7% among GPs and Pediatricians respectively. Some even used injectible antibiotics. Co-trimoxzole and metronidazole were the preferred choices. Pediatricians also prescribed pre/probiotics in 66.6% of cases. 9.8% of GPs prescribed antimotility agents. No ORS was prescribed in 13.1% and 5.7% of patients by GPs and pediatricians, respectively. Oral zinc was prescribed in about 50% cases. The results are summarized in ***Table* I.**

In a UNICEF survey of 10 Indian districts, not more than 47% of prescriptions for diarrhea included ORS while "tonics", anti-diarrheal drugs and injections continued to be prescribed in the same proportion as for ORS. The survey documented less than 1% prescriptions for zinc [7]. A retrospective study in tertiary care hospital of Chennai, India showed that use of antimicrobials and zinc was 41.8% and 65%, respectively. The use of zinc had increased to 75% over a three year period. This was accompanied by a decline in the use of antibiotics to below

TABLE I PATTERN OF DRUG PRESCRIPTION BY DOCTORS IN DIARRHEA

Drug	Pediatricians (*n*=174)	General physicians (*n*=214)	Total (*n*=388)
Antibiotics	130 (74.7%)	190 (88.7%)	320 (82.5%)
Oral	128 (73.5%)	180 (84%)	308 (79.4%)
Pro/prebiotics	116 (66.6%)	103 (48.1%)	219 (56.4%)
Antiemetics	63 (36.2%)	104 (48.6%)	167 (43%)
Antisecretory agents	39 (22.4%)	49 (22%)	88 (22.7%)
Antimotility agents	01 (0.5%)	21 (9.8%)	22 (5.7%)
Low/zero lactose formula	26 (14.9%)	53 (24.7%)	80 (20.6%)
No ORS	10 (5.7%)	28 (13.1%)	38 (9.8%)
Oral Zinc	103 (59.1%)	89 (41.5%)	192 (49.5%)

30% [8]. A recent hospital based cross-sectional quantitative study from Ujjain, India, depicted that ORS, antimicrobials, probiotics and racecadrotil was used in 58%, 71%, 68% and 19% of cases, respectively [9], in present study it was 90.2%, 82.5%, 56.4% and 22.7%, respectively.

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Trend of Antibiotic Resistance in Children with First Acute Pyelonephritis

There have been many recent reports of increasing antimicrobial resistance among uropathogens. In this study, we reviewed medical records of children (<18 yr age) with first acute pyelonephritis admitted to our Institution between January 2005 to December 2009. 411 children (189 girls) were studied and increasing trend in bacterial resistance toward co-trimoxazole, 2nd and 3rd generation cephalosporins and gentamicin were observed.

Key words: Antibiotic, Child, Pyelonephritis, Resistance, Serbia.

Prompt treatment of childhood acute pyelonephritis is likely to reduce the risk of permanent renal scarring [1]. Increased antimicrobial resistance, especially the resistance against broad-spectrum beta-lactams (ESBL) uropathogens has jeopardized the antibiotic treatment of UTI in children [2]. The aim of this study was to assess the changing trend of local resistance patterns of urinary pathogens to commonly used anti-microbial agents in Serbia during the last 5 years in children with acute pyelonephritis.

Medical records from January 2005 to December 2009 of all children aged less than 18 years of age admitted to the Nephrology or Pediatrics Department at the University Children's Hospital in Belgrade for their first acute pyelonephritis were reviewed (*n*=411; 189 girls; median age 4 mo; range 0.1-112 mo). Two different periods, early (from January 2005 to December 2007) and late (from January 2008 to December 2009), were studied. The following antimicrobial agents were tested: ampicillin (AMP), a combination of sulphametho-xazole and trimethoprim (TMP-SMZ), cephalexin, ceftriaxone, cefotaxime, ceftazidime, gentamycin, amikacin and ciprofloxacin. Multi-drug resistance was defined when resistance to at least three different groups of antibiotics was apparent.

When early and late study periods were compared increasing trends in bacterial resistance patterns were observed towards TMP-SMX, 2nd and 3rd generation cephalosporins and gentamicin as well as in multidrug resistance, while a decreasing trend was seen towards amikacin and unchanged towards ciprofloxacin (***Table* I**). The majority of ESBL (+) *E. coli* strains were multi-resistant (56.5 % in early and 66.23% in late period), while only 3.4% and 5.6% of ESBL (-) strains, respectively.

In poor and underdeveloped countries, overall prevalence of antimicrobial resistance is notably high, reflecting irrational and inordinate use of anti-microbial