SIGNIFICANCE OF E. COLI AND ROTA VIRUS IN INFANTILE DIARRHOEA

Pages with reference to book, From 326 To 328

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Abstract

Pathogenic E.coli (61%) and Rotavirus(7%) were found in diarrhoeal stools of children. Amongst pathogenic E. coli enteropathogenic E. coil was mainly isolated which was sensitive to gentamycin. Infection due to pathogenic E. coil and Rotavirus was more among males upto one year of age (JPMA 35:326, 1985).

INTRODUCTION

E. coli and Rotavirus have been frequently found in infantile diarrhoea[1]. The present study was done to determine the importance of these two pathogens in diarrhoeal disease in our patient population.

MATERIAL AND METHOD

Fecal samples were collected in sterile containers from 100 children (58 males and 42 females) with a history of acute diarrhoea varying from few hours to 72 hours. Children receiving antibiotics, antidiarrhoeal, antiamoebics and other drugs were excluded from this study. Direct microscopic examination in saline and iodine was done for ovas and cysts.
Bacteriological examination was done by inoculating the fecal samples on MacConkey Agar, TCBS Agar, S.S. agar, Yersinia agar. Identification of isolated colonies was done by API kit method. Serotyping of E.coli was done using poiyvalent and monovalent seras. Enterotoxigenic E.coli was detected by the infant mouse assay for heat stable toxin and the Biken test for heat labile toxin. Rotavirus was detected by the ELISA technique using Rotazyme kit.

RESULTS

Pathogenic E.coli were seen in 61% cases, while Rotavirus was present in 7% of fecal samples.

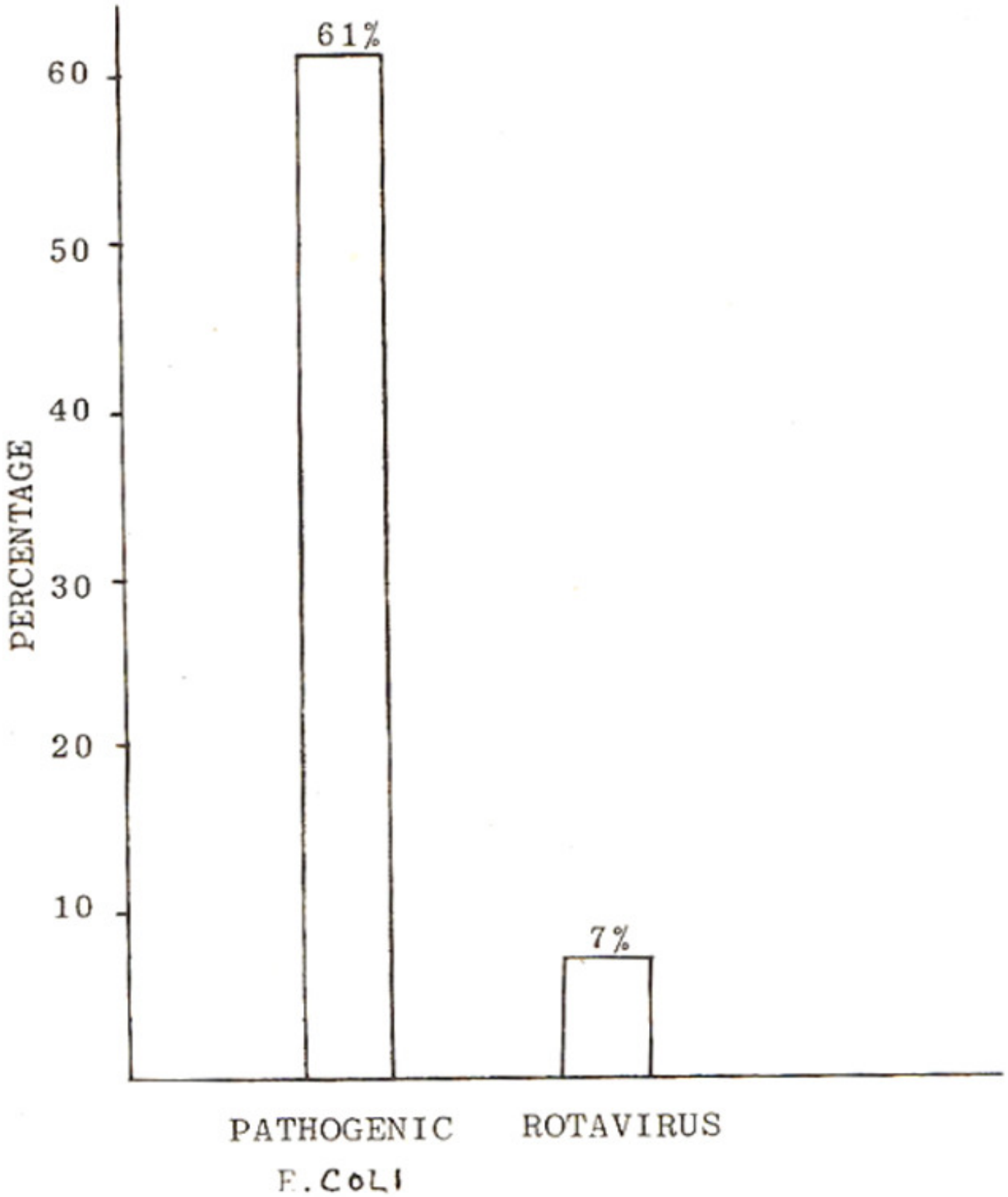

Fig.1. Pathogens isolated.

Bacteria isolated from fecal samples are shown in Table I.

Table : I

Bacteria isolated.

Bacteria	Number	Percent
Esch. coli	97	97
Klebsiella	7	7
A. faecalis	5	5
Proteus	4	4

E.coli was mainly isolated followed by other bacteria in less than 10% of cases.
Esch. coli isolated from diarrhoeal stool was identified as enteropathogenic (55%) and enterotoxigenic (7%). Amongst the enterotoxigenic E.coli 5% were heat stable and 2% heat labile. Only one strain had both heat stable and heat labile toxin (Fig. 2).

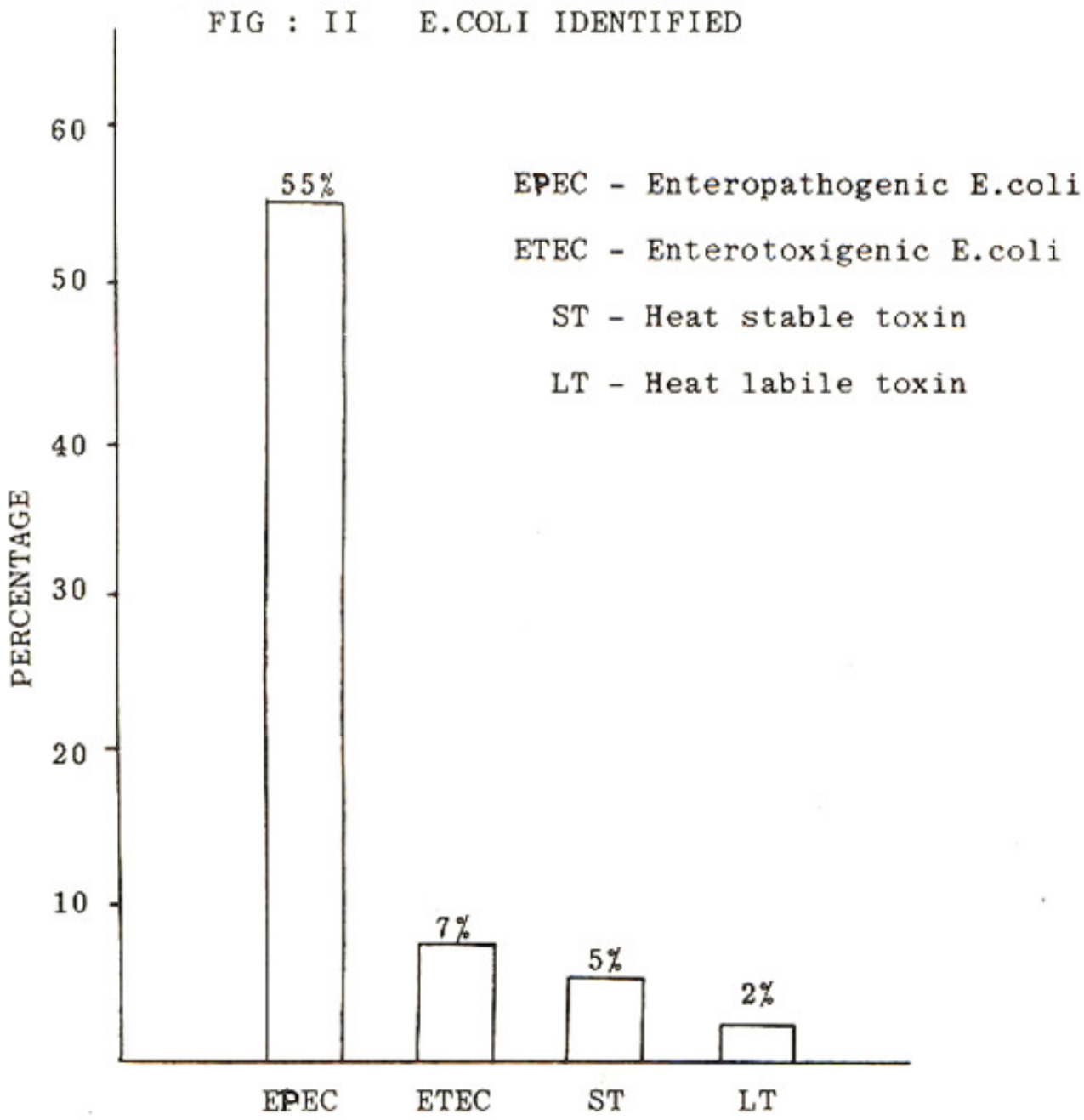

Fig. 2. E. coli identified.

Pathogenic E.coli and Rotavirus were both found more in males upto one year of age. With the advancement in age the frequency of both the pàthogens decreased (Fig 3 and 4).

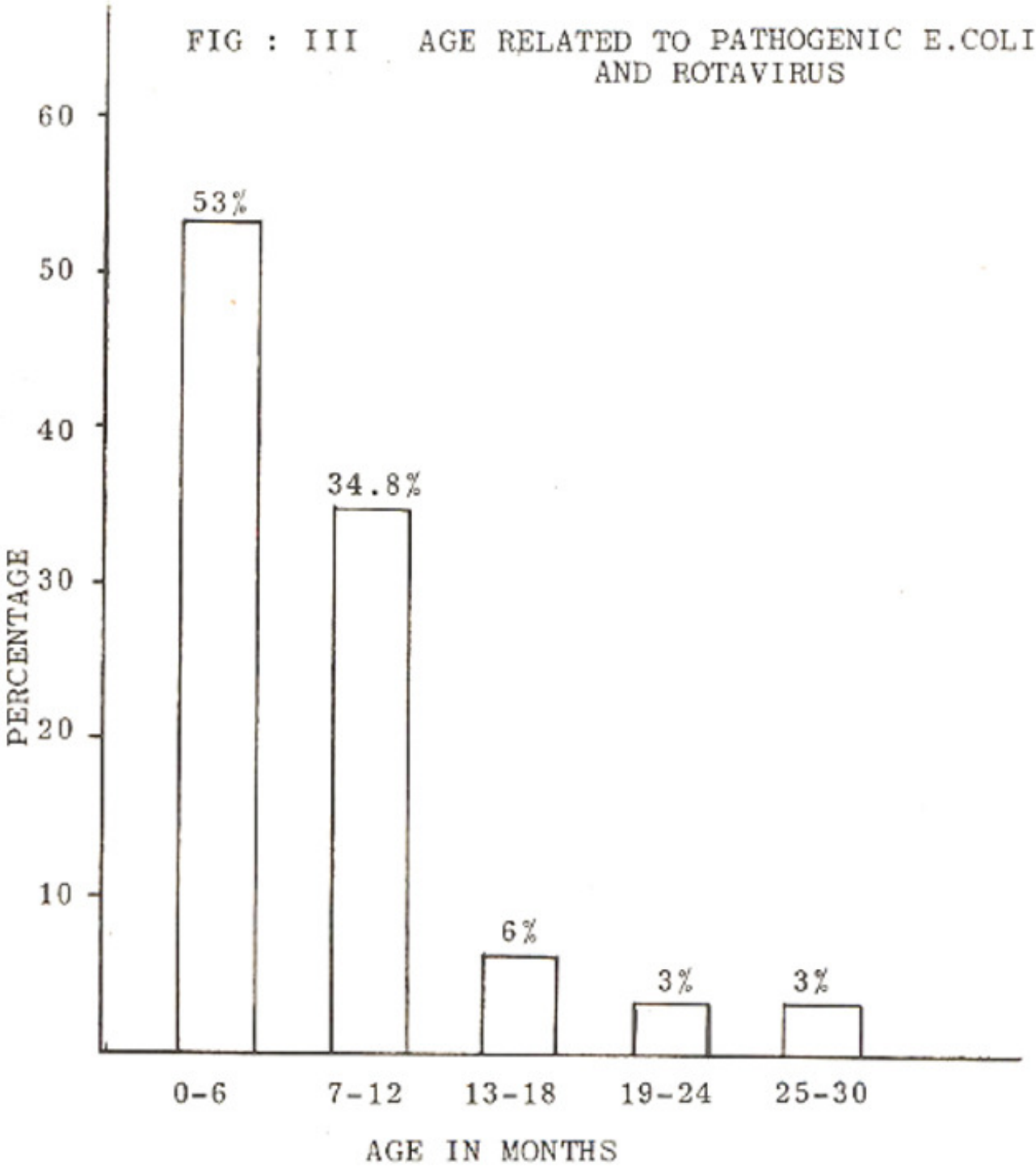

Fig. 3. Age related to Pathogenic E. coli and Rotavirus.

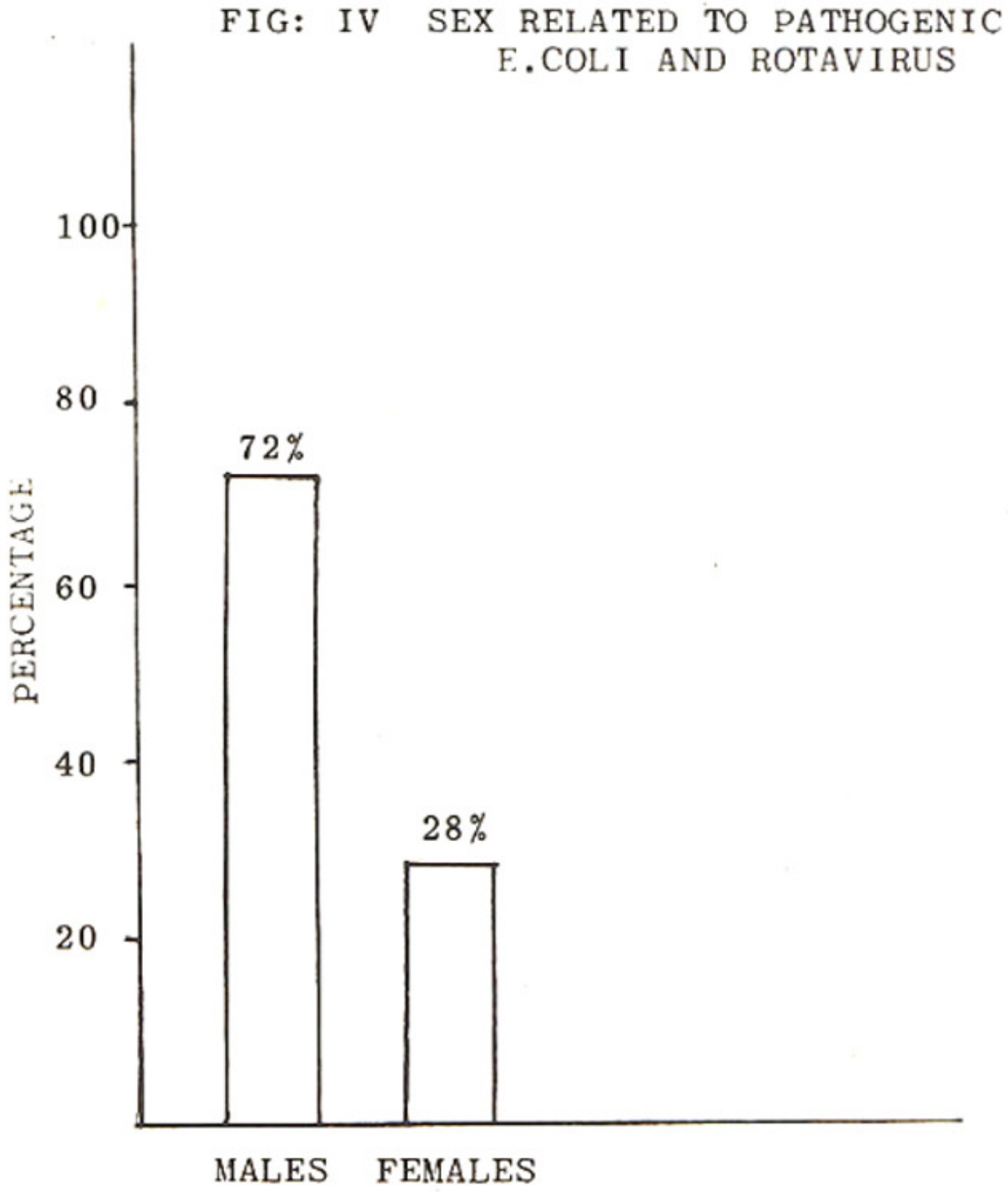

Fig. 4. Sex related to Pathogenic E. coli and Rotavirus.

Antibiotic sensitivity pattern for E.coli is shown in Table II.

Table - II

Antibiotic sensitivity Pattern for E. coli.

Antibiotics	Percentage sensitive
Gentamycin P	97.2
Polymyxin	82.1
Fosfomycin	42.5
Kanamycin	30.1
Ampicillin	3.1
Amoxcillin	3.1
Carbencillin	2.2
Tetracycline	0%

Gentamycin was most effective antibiotic followed by polymyxin, Fosfomycin and Kanamycin.

DISCUSSION

Diarrhoeal disease due to Rotavirus and enterotoxigenic E.coli has been very often reported in the past few years.[2-4] In the present study enterotoxigenic E.coli (ETEC) was found in few cases. Enteropathogenic E. coli (EPEC) was mainly isolated although there are reports from other countries where EPEC is no longer considered a causative agent of infantile diarrhoea.[5] Rotavirus was less

frequently seen in this study as compared to our previous work.[6] The higher frequency of infection with Rotavirus upto one year of age has also been reported by other workers.[7]
Although sensitivity pattern revealed gentamycin to be the most effective drug against E.coli but treatment of diarrhoea with antibiotics should be avoided as much as possible. Symptomatic treatment with oral rehydration, electrolyte balance and control of diarrhoea with diet should be employed in most of the cases.

ACKNOWLEDGEMENT

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