SUMMARY AND CONCLUSION
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The present work entitled "A clinico-microbiological study of acute diarrhoea in children" was carried out in the department of Pediatrics, M.L.B. Medical College, Jhansi. A total of 189 children under the age of 5 years with acute diarrhoea were studied. One hundred age and sex matched non-diarrhoeal children comprised the control group. Children with acute diarrhoea were selected from Paediatric out patient Clinic. Detailed history, in particular, for duration of illness, frequency and consistency of stools, presence of blood and mucous in the stools, associated feature like vomiting, fever, pain in abdomen, tenesmus etc. was recorded. Feeding pattern was noted in children under 2 years of age with emphasis on breast feeding, bottle feeding and bottle hygiene. A detailed physical examination was carried out. Assessment of nutritional status was done according to classification of Indian Academy of Pediatrics.

Stool samples were collected in clean glass vials and were sent to the laboratory within two hours of collection. In the laboratory samples were processed immediately.

A naked eye examination of stool samples for consistency and presence of blood and mucous was done. A direct microscopic examination was carried out for detection of trophozoites of *G. lamblia* and *E. histolytica*
Stool specimens were processed for the isolation of bacterial enteropathogens including Campylobacter jejuni. For isolation of campylobacter, Blaser's medium was used. Due to non-availability of typing antisera and laboratory constraints, screening E. coli strains (as pure or predominant growth) could not be performed for enteropathogenic E. coli (EPEC) and enterotoxigenic E. coli (ETEC).

Detection of rotavirus antigen in faecal specimen was done by enzyme linked - immunosorbant assay (ELISA) using methodology and reagents supplied by WHO collaborating centre on rotaviruses. Birmingham, U.K. Reading of ELISA was taken by naked eye.

On stool examination, enteropathogens were found in 65.1% children with acute diarrhoea. Rotavirus was detected using ELISA technique in 18% children with acute diarrhoea. Bacterial enteropathogens belonging to 6 species were isolated in 40.7% of diarrhoeal cases. Bacterial enteropathogens found were E. coli in 21.7%, Shigella in 7.9%, Klebsiella in 1.1%, Campylobacter in 5.8%, Salmonella in 1.6%, and Pseudomonas in 1.1%. G. Lamblia and E. histolytica were found in 3.2% and 2.6% cases respectively. Mixed agents were detected in 2.1% cases.

Enteropathogenic organisms were encountered in 17% of non diarrhoeal controls. E. coli were isolated in 11%, Campylobacter in 4%, mixed pathogens in 1% and rotavirus in 1% non diarrhoeal control children. Shigella, Klebsiella and Pseudomonas and trophozoites of G. lamblia, E. histolytica, were not encountered in control children.
Vibrio-cholerae and Vibrio-parahaemolyticus were not isolated from any case or control in the present study. Isolation rate of campylobacter was not significantly different in diarrhoeal and non diarrhoeal children.

Rotavirus diarrhoea occurred mostly in children below 2 years, peak during 7-12 months. No rotavirus was detected after 3 years of age. Shigella infection was less frequent during infancy. Campylobacter was found more frequently during 7-24 months of age.

An analysis of feeding pattern of diarrhoeal and non diarrhoeal children under 2 years revealed that substantial number of children in both the groups were bottle fed. The prevalence of breast feeding below 6 months of age was significantly higher in nondiarrhoeal group as compared to diarrhoeal (84.2% vs 55.9%; p < 0.01). The enteropathogens isolated from stool examination in breast fed and bottle fed were largely comparable.

There was preponderance of malnourished children in the present study. 67.2% children in diarrhoeal group were undernourished. 19% of total diarrhoeal children were suffering from grade III and IV malnutrition. No significant difference was observed in isolation of different enteropathogens in normally nourished and severely malnourished children.

Out of total 189 children with acute diarrhoea nearly half (48.7%) presented with watery diarrhoea. 13.8% children had blood in stool with or without mucous.
Children with rotavirus illness presented more frequently with watery diarrhoea (82.3%) and vomiting (70.6%). Presence of fever and upper respiratory tract infection was not found to be more frequently associated. In E. coli diarrhoea clinical features were not specific. Half of children campylobacteriosis presented with watery diarrhoea. Children with Shigella infection presented both as dysentery and watery diarrhoea. But dysentery was more frequent (66.7%) with Shigella infection.

The following conclusions were drawn from the present study.

1. Rotavirus is an important cause of acute diarrhoea in children particularly below 2 years of age. Rotavirus accounted for 18% diarrheas in children under 5 years of age in the present study.

2. Bacterial enteropathogens accounted for 40.7% cases of diarrhoea. Commonest among them were E. coli (21.7%), Shigella (7.9%) and Campylobacter (5.8%).

3. There was no significant difference in isolation rates of campylobacter from diarrhoeal and non diarrhoeal children.

4. Diarrhoea due to vibrio-cholerae is probably rare in this region as V. cholerae was not detected in any case in the present study.

5. G. lamblia and E. histolytica were not common as a cause of acute diarrhoea in children.
6. Protective role of breast feeding is discernible in young infants.

7. There was no significant difference notable in microorganisms isolated in stool examination of breast fed and bottle fed cases and similarly in normally nourished and undernourished children with acute diarrhoea.

8. Clinical features of rotavirus and shigella diarrhoea may help in indicating towards their etiology.