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ORIGINAL ARTICLE

Histopathological Studies of *Escherichia coli* in Albino Mice

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Abstract

Pathogenicity test on 13 isolates out of 35 caused death of mice after intra-peritoneal inoculation. Post mortem analysis revealed gross lesions of enteritis, retentions of urine, necrosis of liver and hemorrhage in lungs. Histopathological analysis showed typical lesions of glomerulonephritis, degeneration of intestinal epithelium, fusion of villi of intestine, liver showing vacular degeneration, congestion, dilatation of hepatic sinusoids and hyperamia. Spleen showed severe haemorrhage and degeneration of parenchymatous tissue.

Key words: Animal inoculation, Gross lesions, Histopathological lesions.

1. Introduction

In the present study pathogenicity of 35 *Escherichia coli* isolates from poultry postmortem, calf diarrhea and human infants' diarrhea samples for confirmation of histopathological lesions was studied using animal inoculation method.

2. Materials and Methods

Confirmed *E. coli* isolates obtained 80 Poultry postmortem, 20 calves' diarrhea and 20 human infant's diarrhoea samples were inoculated in 47 Swiss albino mice divided into three groups. In 6 mice of group one known pathogenic isolate of *E. coli* (MTCC- 443), in 6 mice of group two, Phosphate Buffer Saline (PBS) and in 35 mice of group three 0.2 million *E. coli* cells were injected through intra peritoneal route. At every 6 hrs interval post mortem analysis was done for histopathological validity (Culling, 1974).

3. Results and Discussion

In this study, 13 (37.14%) mice out of 35 inoculated with test isolates died due to *E. coli* in accordance with Blanco *et al*. (2004). The gross pathological lesions such as enteritis, retentions of urine, necrosis of liver and hemorrhage in lung were observed analogous to finding of Mansfield *et al.* (2001). Histopathological examination revealed lesions in kidney, liver, spleen and intestinal epithelium. Glomerulonephritis was seen in kidney. Degeneration of intestinal epithelium and fusion of villi of intestine was also observed. Liver showed vacular degeneration, congestion, dilatation of hepatic sinusoids and hyperamia. Spleen illustrated severe haemorrhage and degeneration of parenchymatous tissue as also explained by Thomson *et al.* (1996).

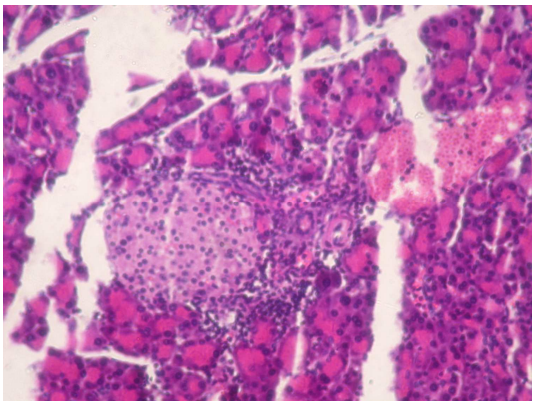

Fig 1: Kidney showing glomerulonephritis

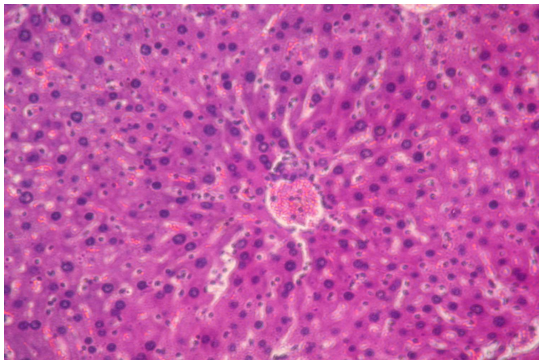

Fig 2: Vacoular degeneration, Congestion and dilatation of hepatic sinuosoids

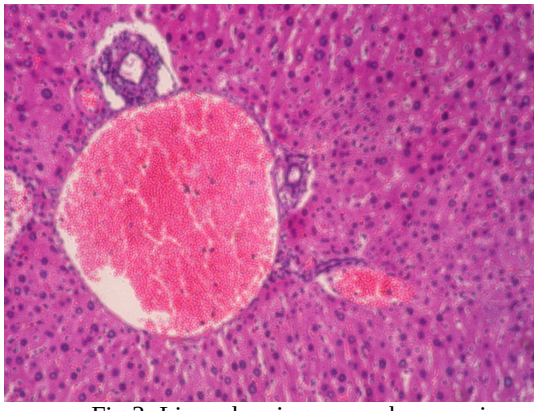

Fig 3: Liver showing severe hyperemia

4. Conclusion

35 isolates of *Escherichia coli* obtained from 120 different samples of poultry post mortem, calves diarrhoea and human infants diarrhoea were scrutinized for pathogenicity using swiss albino mice model. Out of these only 13 isolates caused death and revealed typical gross and histological lesions.

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