Summary

Acute diarrhea is a common cause of morbidity and mortality all over the world. Conservative estimates put diarrhea in the top 5 causes of death worldwide, most occurring in young children in developing countries. Its etiology includes bacteria, viruses, parasites, toxins and drugs. It may be just a self-limiting diarrheal illness or may be associated with other manifestations as nausea, vomiting, anorexia, malaise, fever or even sever dehydration leading to death ***(Boschi Pint et al., 2008).***

Our aim was to study the commonly encountered microbial causes of acute diarrhea in Egyptian children.

This cross-sectional (descriptive) study was conducted on 50 randomly selected children, 28 males and 22 females, aged 2-12 years, suffering from acute diarrhea. Thirty four of them came from rural areas and the remaining 16 were living in urban localities. The children were collected from Benha University Hospital and El-Menshawy Hospital in Tanta, Egypt, from January 2011 to June 2011.

We found that acute diarrhea is significantly commoner among preschool children (2-6 y's) than among school children (>6 y's). Also, it is significantly commoner in the rural areas compared with the urban ones. However, no significant gender predilection was detected.

In our study, stool examination, culture and virological studies revealed that acute diarrhea is most commonly due to mixed infection (30%), less commonly bacterial (22%) or parasitic (22%) in etiology and least commonly due to viral infection (18%). The cause could not be detected in 8% of our patients.

The most frequently isolated organisms were Entameba histolytica (20%), followed by Rota virus (16%), then Salmonella species (14%) and E.coli (6%). The least frequently isolated organisms were Giardia lamblia, Adeno virus and Shigella species (2% each).

Viral and mixed infections were significantly commoner in preschool children than in school children while bacterial infection was significantly more predominant in school children. Parasitism showed no significant age predilection.

In our study we found that the most frequently isolated organism among the preschool children was Rota virus (22.2% of the patients) followed by Entameba histolytica (16.6%) then salmonella (5.6%) and lastly Shigella, E.coli, Adenovirus and Giardia lamblia in the same percentages of 2.8% of the patients. Among our school children, the most frequently isolated organisms were Entameba histolytica then Salmonella typhi in percentages of 28.5% and 21.4% respectively followed by other Salmonella species and E.coli in the same percentage of 14.3% of cases.

In our study the most frequent type of infection in the rural areas were mixed then bacterial infections (26.47% and 23.53% of cases respectively) followed by parasitic and viral infections in the same percentage of 20.6%.In the urban areas, the most frequent type of infection was mixed then parasitic infections (37.5% and 25% respectively) followed by bacterial and viral infection (18.75% and 12.5% respectively). Both viral and bacterial infections were significantly commoner in the rural areas than in the urban ones.

In the rural areas, after mixed infection (26% of cases), the next commonly isolated pathogen was Rota virus (21%), followed by Entameba histolytica, (17.6%) then E.coli and other Salmonella species (8.8% each) and lastly

Salmonella typhi, Shigella and Giardia lamblia (3% each). In the urban areas, after mixed infection (37.5%), the next commonly isolated pathogen was Entameba histolytica (25%) followed by Salmonella typhi (12.5%) then Rota virus, Adeno virus and the other Salmonella species (6.25% each).

In our study, the main symptoms of viral gastroenteritis were watery diarrhea, vomiting, and low grade fever, while the main symptoms of bacterial, parasitic and mixed infections were diarrhea, fever, and abdominal pain with mucoid and/or bloody offensive stools.

Viral gastroenteritis is frequently complicated by dehydration (88.8%). Erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP) were significantly higher in bacterial gastroenteritis (90%) than in the other types of acute diarrhea.