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EPIDEMIOLOGY OF INFECTIOUS INTESTINAL INFECTIONS BY FECAL-ORAL MECHANISM

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Abstract: This article analyzes the current epidemiological status of intestinal infections transmitted through the fecal-oral mechanism, the causes of disease spread, and preventive measures. Based on statistical data from Uzbekistan and global sources, the factors contributing to the spread of these diseases and their relationship with socio-hygienic conditions are highlighted.

Keywords: fecal-oral route, intestinal infections, epidemiological analysis, water quality, sanitation, hygiene.

INTRODUCTION

Intestinal infections remain prevalent primarily in areas where the population's standard of living is low, sanitation and hygiene practices are underdeveloped, and access to clean drinking water and sewage systems is inadequate. Like most infectious diseases, intestinal infections also exhibit seasonality. The microorganisms that cause acute intestinal infections tend to multiply more rapidly in warm conditions.

These infections are caused by a variety of pathogens. Depending on the type of causative agent, diseases such as typhoid fever, salmonellosis, dysentery, yersiniosis, rotavirus, and enterovirus infections tend to occur more frequently during the summer months. Several factors contribute to this seasonal increase.

On hot days, excessive consumption of unboiled water may reduce the concentration of hydrochloric acid in the stomach, thereby weakening the body's immunobiological defenses and accelerating the infection process. Consuming poorly stored food, unwashed fresh fruits, or being in contact with individuals infected with intestinal infections increases the risk of transmission. Additionally, swimming in open water bodies and ingestion of contaminated water, as well as mechanical transmission through flies, further facilitate the spread of these diseases.

MATERIALS AND METHODS

Comparative Epidemiological and Bacteriological Report on Acute Intestinal Infections in Fergana City for the Period 2020–2024 (First Four Months)

Based on the comparative epidemiological data from 2020 to 2024 regarding acute intestinal infections in Fergana city, the following trends were observed:

In 2020, the total number of acute intestinal infections was 105 cases, with an incidence rate of 36.6 per 100,000 population. Among children, the absolute number of cases was also 105, with an incidence rate of 142.7.

In 2021, the total number of cases was 108, with an incidence rate of 37.4, including 108 child cases and a corresponding incidence rate of 148.1.

Specifically, salmonellosis cases in 2020 totaled 8, with an incidence rate of 2.8, including 8 cases among children (incidence rate: 11.1). In 2024, salmonellosis decreased to 5 total cases (incidence rate: 1.7), including 2 cases in children (incidence rate: 2.7).
Etiologically confirmed intestinal infections (code 008) in 2020 accounted for 99 total cases, with an incidence rate of 98.0, all of which occurred in children (99 cases, incidence rate: 99.0). In 2024, the number increased to 108 cases, with both general and pediatric incidence rates at 100.0.
Unspecified intestinal infections (code 009) in 2020 included 2 cases (incidence rate: 2.0), all in children. By 2024, no cases of this type were reported.
Dysentery was reported in 2020 with 1 case (incidence rate: 0.3), occurring in a child (incidence rate: 1.4). In 2024, no dysentery cases were recorded.
Overall, the incidence of acute intestinal infections decreased by 39.3% in 2020 and by 4.1% in 2016.

RESULTS

Concept and Significance
The fecal-oral route is the primary transmission pathway for these infections, involving contaminated drinking water, improperly stored or unwashed food, poor personal hygiene, and commonly used household items. Pathogens such as Shigella spp., Salmonella spp., and Rotaviruses are commonly transmitted through this route (UNICEF, 2023).

Global Scale

According to WHO, in 2022, more than 1.7 billion cases of intestinal infections were reported worldwide, with over 370,000 deaths among children (WHO, 2023).

Uzbekistan

According to the Ministry of Health of Uzbekistan in 2023, the highest incidence rates were observed in Fergana Valley, Kashkadarya, and Surkhandarya regions due to high population density and poor water quality.
Transmission Factors and Socio-Hygienic Conditions
Major contributing factors include decentralized or polluted water sources, street food, inadequate sanitation in educational institutions, and poor handwashing practices.
Disease Consequences and Social Impact
These infections especially affect children under five, leading to dehydration, developmental delays, weakened immunity, disruption in education, and increased healthcare costs.
Effectiveness of Preventive and Control Measures
Preventive strategies include improving water quality, promoting hygiene education, food safety controls, vaccination programs, and rapid response during outbreaks.

DISCUSSION

According to the comparative data for the first four months, it is evident that among intestinal infections, the proportion of etiologically confirmed infections (code 008) slightly increased in 2021 compared to 2020. Typhoid fever and paratyphoid fever were not reported at all, while the incidence of salmonellosis, dysentery, and other intestinal infections showed a declining trend.

It is important to note that only 10–15% of health outcomes depend on the services of medical professionals, whereas about 60% are influenced by our daily healthy lifestyle choices. Therefore, in preventing acute intestinal infections—especially since their seasonal peak occurs during the summer—it is crucial to follow certain hygienic practices. These include drinking only boiled water, prioritizing cleanliness, teaching children to wash their hands with soap before meals and after using the toilet, and adhering to personal hygiene rules in public places.

Additionally, it is vital to wash fresh fruits before consumption, avoid eating poorly stored or long-standing food, and be cautious about water quality while swimming in open water bodies, ensuring not to ingest any water. The cleanliness of the environment, living spaces, and shared public areas must also be maintained consistently.

Moreover, by enhancing the population's medical awareness through effective public health campaigns, we can further improve the prevention of acute intestinal infections.

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