THE IMPACT OF CHANGES IN THE PUBLIC CATERING SYSTEM ON THE INCIDENCE OF SALMONELLOSIS AMONG THE POPULATION

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Currently, in various countries, the number of patients affected by salmonellosis continues to increase. According to WHO experts, salmonellosis remains a serious concern globally. The socio-economic damage caused by salmonellosis is significant. Experts note that even in countries with well-established epidemiological surveillance systems, official reports about the spread of salmonellosis often fail to reflect the actual situation due to limitations in bacteriological diagnostics. Such issues have been noted in numerous studies conducted in countries such as the UK, Spain, Austria, Bulgaria, Thailand, and Tasmania. The European Union has reported a growing trend in human salmonellosis cases since 2013, attributing this to a 57% increase in salmonellosis among poultry from 2013 to 2020.

Worldwide, the bacterium Salmonella enterica subsp. enterica is the main cause of foodborne salmonellosis in humans. In 2010, Campylobacter and Salmonella enterica were the leading bacterial agents responsible for gastroenteritis, accounting for 30% (174.3 million cases) of global diarrheal diseases. In the Russian Federation, salmonellosis constitutes about 6% of bacterial and viral intestinal infections. Most cases occur sporadically, and 80% are linked to foodborne sources. Currently, Salmonella enterica subsp. enterica serovar Enteritidis (S. Enteritidis) is the dominant strain in Russia, as in many other countries.

Extensive studies on Salmonella have revealed that many serovars exhibit partial heterogeneity, with S. Enteritidis showing limited heterogeneity. Surveillance conducted by the Pasteur Institute of Epidemiology and Microbiology in Saint Petersburg across 12 sites found S. Enteritidis phage type 1 in 7.5% of egg samples, as well as on equipment, workers' hands, and embryonic swabs. The epizootic spread among domestic birds (chickens), and the increasing epidemiological significance of poultry products—particularly eggs as a major transmission vector—have indirectly contributed to the rise in human salmonellosis over the past decade.

At the same time, the age distribution of cases has shifted, with increased incidence among older children and a growing proportion of foodborne infections. The clinical manifestation of the disease has also evolved, with a notable increase in S. Enteritidis cases. The issue of salmonellosis has now gained significant importance in both medical and veterinary fields. This is due to the growing number of asymptomatic carriers and convalescent carriers, as well

as the infection of farm animals and poultry, and the expansion of enterprises processing and selling semi-finished animal products.

The primary transmission route remains foodborne, with poultry meat and egg products as the dominant sources. Epidemic outbreaks are often linked to violations in food preparation technology, improper storage, and errors in cleaning and disinfecting equipment in food preparation facilities. In the USA and UK, outbreaks have been attributed to the consumption of eggs and egg products from infected poultry, most often caused by Salmonella enteritidis. In Australia and New Zealand, tourists have often contracted this serovar abroad, while local outbreaks were mainly caused by Salmonella typhimurium.

Between 2004–2005, while 40,000 salmonellosis cases were officially registered in the USA, the actual number of infected individuals was estimated at around 2 million. Additionally, this infection resulted in 18,000 hospitalizations and 500 deaths annually. The economic burden of salmonellosis on the U.S. healthcare system is estimated at $250 million annually, while for the European Union countries, it is around €3 billion. Between 1990 and 2014, 53 epidemic outbreaks were recorded in the USA, leading to 2,630 cases, 387 hospitalizations, and 5 deaths. Each outbreak averaged 26 cases (ranging from 4 to 363), and around 77% of outbreaks (41 of 53) were caused by multiple strains.

Currently, S. Enteritidis is the most common serovar responsible for foodborne toxic infections worldwide. In many countries, this microorganism has been identified as the main cause of food poisoning. In both the USA and the EU, S. Enteritidis is the leading foodborne pathogen. In developing African countries, salmonellosis also poses a major problem. In 33 of the 54 African countries, salmonellosis has been linked to bacteremia, especially in five geographic regions, notably the eastern part of the Sahara. Surveillance of suspected invasive bacterial infections in children has shown high mortality rates due to salmonellosis.

Salmonella enterica is among the main foodborne pathogens globally. In Chile, outbreaks of foodborne illnesses have often been caused by this bacterium. Despite numerous efforts to control and prevent the disease, high incidence rates persist among humans. Various factors contribute to the ongoing epidemiological burden. In an effort to identify contributing factors, 40 water sources in Chile's most densely populated agricultural areas were tested. A total of 35 cultures belonging to different serotypes of S. Enterica were isolated, with a predominance of S. Typhimurium and S. Enteritidis.

Since 2010, the UK has reported epidemic outbreaks linked to the consumption of duck eggs. In Poland, by 2024, the incidence of salmonellosis-related intestinal infections increased by 10.8% compared to the previous year. According to researchers in Armenia, S. Enteritidis has remained the leading cause of foodborne intestinal infections over the past 20 years.

Over the last two decades, the epidemiological characteristics of salmonellosis have changed significantly across many countries. Incidence rates among humans have increased, along with a rise in livestock and poultry infected with S. Enteritidis. Contributing factors include socio-economic changes, intensified migration processes, and transformations in the public catering system due to privatization.

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