

Causality of Salmonellosis and Antibiotic Resistance Assessment in Shirak Marz 2014-2022

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Received Date: 05 February 2023; **Accepted Date:** 07 April 2023; **Published date:** 25 April 2023

Citation: Armine Andryan, (2023). Causality of Salmonellosis and Antibiotic Resistance Assessment in Shirak Marz 2014- 2022. *Endocrine System and Diabetes*, 2(2): DOI: 10.58489/2836-502X/010.

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Abstract

Over the past eight years, salmonella infections in Armenia have shown an upward trend. To clarify the causality, epidemiological patterns and features, as well as to assess the resistance of pathogens to antibiotics, an epidemiological study and analysis of cases registered in the Shirak region were conducted. Laboratory-confirmed cases of salmonellosis were studied by methods of retrospective epidemiological and computer statistical analysis. A 20-year regression analysis of salmonellosis infection was performed using Arc-GIS. In the period from 2014 to 2022, we collected samples of 384 cases of salmonellosis registered in 119 communities of the Shirak Marz. Classical methods revealed subtypes of the pathogen and sensitivity to antibiotics. During the study, out of 3257 cases of acute intestinal infection in 119 communities, *Salmonella enteritidis* was confirmed in 295(9.1%) of cases, and *Salmonella typhimurium* was confirmed in 89(2.7%). Among the respondents, the probability of infection in those who consume animal products is 4.3 times higher (RO=4.3) than in those who are not related to farm animal products: We found that the study expanded the areas of integrated risk associated with the breeding of farm animals. In 2014.in 2022, 48 diagnoses of salmonellosis of animal origin were confirmed in 7 communities, and in 2022 - 140 cases in 19 communities (the territorial risk increased by 2.9 times). Sensitivity to antibiotics is high- 52.6%, especially to Ceftriaxone, Ciprofloxacin, Doxycycline. Patients consume the meat, eggs and dairy products of their animals. They are given antibiotics for growth and disease treatment. 136 patients (35.4%) had moderate and severe intoxication 39 and high fever. Only 11.9% of patients with moderate and severe gastroenterocolitic poisoning and fever of 39 degrees or higher are treated with antibiotics. Of the patients, 73% are people aged 3 to 62 years. Gender peculiarities are not observed: 48% of patients are men, 52% are women. The risk associated with the nutritional factor: RO=4.3. The number of cases of the disease increased by 2.9 times and the number of communities by 2.7 times compared to 2014, due to an increase in breeding of farm animals. A 3,5-4-year periodicity for Salmonellosis was identified. A negative result is the misuse of antibiotics in humans and animals, which also ensures the high sensitivity of the antibiotics used. Industry coordination requires a systematic approach and constant monitoring within One Health.