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Medical geographic and epidemiological specifics of brucellosis in Shirka marz

Armine Andryan
NCDCP SNCO of the RA Ministry of Health, Armenia

Introduction: Brucellosis is a zooanthroponotic disease endemic to Shirak marz that incurs a heavy economic burden. Within the last ten years, outbreaks of Brucellosis were recorded among animals in all 119 communities of Shirak with several cases among humans as well.

Goal: To determine the epidemiological, geographic, and clinical specifics of Brucellosis to help develop effective countermeasures.

Materials and Methods: A retrospective epidemiological survey examined 208 cases of human Brucellosis and 540 people from Shirak who had contact with animals that tested positive for contact with Brucellae from 2007-2017. All cases included in this analysis also showed positive serological results (Huddleston++++ and Wright 1:100-1200). The data were subjected to statistical analysis, and the results were mapped using Arc-GIS version 10.1.

Results: Based on the decennial prevalence of Brucellosis, which has been mapped, endemic areas having one common source for spread of infection were evaluated. There were 748 total human cases identified—208 presented with symptoms, while 540 were found through epidemiological studies. All recorded cases had a specific clinical picture; sixty people (8%) with positive serological results (Huddleston++++ and Wright 1:100-1200) had symptoms of the disease. For the other 688 (92%) testing positive, the disease was asymptomatic or presented as only nodular erythema or petechial skin rash. Nearly 90 (12%) people with positive agglutination test results had no contact with sick animals or food products of animal origin. In 180 (24%) patients, complaints were not congruent with findings from a physical examination. Of the 748 cases, 382 who had contact with infected animals and initially tested positive for brucellosis exposure showed negative results or had a decreasing titer on a second laboratory test. It is suspected that these individuals self-medicated with antibiotics.

When cases were analyzed over time and plotted geographically, patterns emerged showing periodic (3-4 years) outbreaks in the Ashotsk, Amasia, and Akhuryan communities in Shirak.

Conclusion: To accurately manage the risk of brucellosis, different factors have been studied. One major transmission risk is Lake Arpi, a reservoir in Shirak, which serves as a rich area of pasturage for cattle, sheep, and a few goats. For eight months of the year, herders live in tents and tend their flocks, returning to their homes during the winter months. It is strongly suspected that Brucellosis transmission occurs during this period where thousands of animals graze and give birth. Surveys of Brucellosis in animals typically do not include sheep and goats because it is harder to obtain blood samples; however, they are believed to be the

major hosts and vectors for the bacteria due to the fact that healthy cows become infected after being pastured with sheep. People in frequent contact with infected animals can get Chronic Brucellosis, which has significant long-term health risks.

Biography

Armine Andryan is affiliated in National Center for Disease Control and Prevention, MOH, Armenia, Shirak branch. She is a recipient of many awards and grants for her valuable contributions and discoveries in major area of Health research. Her international experience includes various programs, contributions and participation in different countries for diverse fields of study. Her research interests reflect in her wide range of publications in various National and International journals.

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