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Epidemiological features of cystic echinococcosis in Karachay-Cherkessia, Republic of Russia

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Background: Cystic echinococcosis (CE) is an important zoonotic disease caused by the cestode parasite *Echinococcus granulosus*. This infection is characterized by long incubation period, serious organ and systemic lesions and frequently has disability outcomes and even death of the patient. About 200 000 new cases of echinococcosis in humans are diagnosed worldwide each year

Material/methods: We studied 286 cards of epidemiological investigation of foci of cystic echinococcosis, 120 medical records of patients, operated in Clinical Hospital of Karachay-Cherkess Republic.

Results: 286 cases of human echinococcosis were recorded within 2001-2014 in the territory of the KCR. Female population slightly dominated (52.0%) in the gender structure of case,. The proportion of adult patients was 72,0% and most of them (85.4%) were in workable age: from 18 to 59 years. The proportion of the child population was 28.0%. The proportion of children aged from 3 to 6 years was 11,3 ± 3,5%, 7-14 years - 63,7 ± 5,3%, 14-17 years - 25,0 ± 4,8 %.

Analysis of epidemiological data showed that 85.3% of the patients lived in rural areas or in the private households in the city. 88.9% of patients contained domestic animals in their private households: cattle - 40.7%; small ruminants - 13.0%. 46.3% of persons infected by cystic echinococcosis had in a private home ownership both cattle and small ruminants. It is remarkable that 85.3% (244 cases) were engaged in tilling the soil in their kitchen-garden. According to epidemiological history most of the patients - 258 (90.2%) did not follow the rules of personal hygiene. In particular, they consumed the unwashed fruits and vegetables grown in their own home gardens or purchased in the markets. 5.6% of patients had used animal's liver without adequate thermal preparation. 75.1% patients contained dogs and most of persons subjected to routine deworming their dogs less than 1 time per year.

13.6% of cases occurred in persons without any agriculture activity, the proportion of pupils and students was 30.4%; preschoolers - 3.5% of cases. In epidemiological history in 24.7% cases, we could not establish the presence of risk factors echinococcosis infection.

Conclusions: The stability of synanthropic foci of infection in Karachay-Cherkess Republic (KCR) provides by favorable climatic conditions, development of transhumance, which employs a significant number of people in rural areas. The analyses of archival materials of Rospotrebnadzor institutions, veterinary services, primary medical records, official statistics for the period of fifteen years has allowed estimate priority features of epidemic process of echinococcosis in the territory and to determine the main factors contributing to the spread of the disease among the population.