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"THE CHALLENGES FOR QUALITY AND SAFETY ALONG THE FOOD CHAIN"

ABSTRACT BOOK

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BRUCELLOSIS - RE-EMERGING ZOONOTIC AND FOOD BORNE DISEASE

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Introduction: Zoonotic diseases primarily affects domestic and wild animals than transfer to humans. Depending on the agent, way of spreading may be respiratory, contact, alimentary (food or water) or combination. Brucellosis is a re-emerging zoonotic disease which is spreading by all mentioned ways. Disease exists in R. Macedonia since 1980 with over 12.000 reported and confirmed human cases. Disease is reported in all neighbouring and almost all European countries with significantly different incidence.

Aim: To present current epidemiology situation, ways of spreading of the disease in respect of zoonotic and foodborne disease, and measures for control and prevention of brucellosis in Republic of Macedonia, a small country with endemic areas, long history and experience.

Material and Methods: Review and presentation of official data on epidemiology of brucellosis in past 36 years and situation after implementation of new national strategy based on vaccination of small ruminants.

Results: *Brucella melitensis* biotype 2 was confirmed as etiological agent in R. Macedonia. Recent study based on molecular methods for species typing (AMOS PCR and RT PCR), and genotyping (MLVA-16 and MLVA-8), beside *Brucella melitenisis* also confirmed *Brucella abortus* (for the first time in Macedonia). Epidemiological data suggested about 23% of spreading the disease by alimentary way (foodborne disease due to consumption of unpasteurized milk, cheese, and undercooked infected meat), 34% by contact and 43% by combined way of spreading brucellosis. Respiratory way is not often, happens in laboratories or working with infected animals. About 80% of patients lived in rural and 20% in urban areas. Disease in Mediterranean area has seasonal character with maximum in May-June and minimum in winter. Since 2008, in R. Macedonia, national control strategy was completely changed from „test and slaughter" to vaccination of small ruminants (sheep and goats) with Rev 1 vaccine, applied intraocular. Results are significant decreasing of epizooty in animals and human morbidity (287, 167, 107, 94, 47, 35, 20 and 23 in 2009, 2010, 2011, 2012, 2013, 2014, 2015 and 2016 respectively).

Conclusions: Control of Brucellosis is very complicated due large reservoirs in domestic and wild animals. Control of animal brucellosis is imperative for control of human brucellosis. Preventive measures includes effective veterinary and health control of animals (trading and transport and slaughter) and animal products (meat, milk and their products), education of the population, continuously state financial support, institutional cooperation and regional cooperation.

Key words: *brucellosis, control, epidemiology, foodborne.*