

## **Control of Human Brucellosis in Endemic Area** **- Challenge for Veterinary and Human Medicine**

**Vaso Taleski, Milka Zdravkovska, Velo Markovski, Darko Bosnjakovski, Slavco Mrenoski\***

**Faculty of Medical Sciences, University 'Goce Delcev' Shtip, Macedonia**

**\* Faculty of Veterinary Medicine, University St. Cyril and Methodius, Skopje, Macedonia**

Brucellosis is a zoonotic disease of a worldwide veterinarian, medical and economic concern, including most of Mediterranean and south-east European countries. Republic of Macedonia, as an endemic area, is confronting brucellosis since 1980. Disease was brought in by import of infected sheep. From 1980 to 2012, there were a total of 11.884 new cases of human brucellosis, with highest number of 907 human cases in 1992 (population about 2.2 million)

Confronting human brucellosis comprise valid diagnostic tests, effective treatment and implementation of programmes for education of population and medical staff as well.

Diagnosis is not a problem anymore, but high percentage of relapses and treatment failures in spite of contemporary recommended regimens remain as an indicator of seriousness of the disease.

As the tests were developing in world reference centres for brucellosis, they were implemented in our labs, as screening or confirmatory tests, some in studies some as a routine diagnostic test, such are: Agglutinations tests: (Rose Bengal test (RBT), Slide Agglutinations test; Standard tube test (SAT), Wright test; Antihuman globulin test (Coombs); *Brucella* Capt test; 2-Mercaptoethanol test; Micro-technique of 2-Mercaptoethanol test; Complement fixation test (CFT); Indirect enzyme immunoassay (ELISA); Competitive enzyme immunoassay (c-ELISA); Fluorescent polarization assay (FPA); PCR-based assays from peripheral blood samples.

Until 2008, existing system "test and slaughter" was not successful, so high numbers of infected animals and humans (average 400-500 new cases per year) were stable. In 2008, control strategy was completely changed from "test and slaughter" to vaccination for small ruminants (sheep and goats) with Rev 1 vaccine, applied intraocular. Country territory was divided in three vaccination regions: with high, intermediate and low (free of brucellosis) prevalence. For differentiation of Rev 1 strain from infectious/field strains PCR-RFLP based on a mutation in the *rpsL* gene was implemented.

As a result of vaccination, number of human cases significantly decreased, from 480 in 2008, to 287, 167, 106 and 94 in 2009, 2010, 2011 and 2012, respectively.

This program is extended till 2015.

Experiences from some other countries indicate re-emergence of animal and human brucellosis after ceasing the brucellosis control programs. Continual programs, implementing multi-sector and regional cooperation, are an imperative for successful control and eradication of brucellosis.

**Key words:** brucellosis, Rev 1, vaccination.