

## **BRUCELLOSIS RE-EMERGING ZONOTIC DISEASE**

### **- An update on potential new *Brucella* strains and reservoirs**

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#### **Introduction**

Brucellosis is considered worldwide commonest re-emerging zoonotic disease with significantly changes of global ecological map identifying new strains, hosts and reservoirs. Disease have been eradicated successfully in most of developed countries but remains endemic in Mediterranean region, Middle East, Asia, and Central and South America.

#### **Aim**

To present recently identified new *Brucella* strains, hosts and reservoirs.

#### **Material and Methods**

Review of most recent published data of reported and confirmed potential new *Brucella* strains, hosts and reservoirs.

#### **Discussion**

Until recently the genus *Brucella* was considered to represent a genetically homogeneous and clonal group of bacteria associated with: 1. Terrestrial mammalian hosts (Classical strains *B. melitensis*, *B. abortus*, *B. suis*, *B. canis*, *B. ovis*, *B. neotomae*), 2. Marine mammals (*B. ceti* and *B. pinnipedialis*), and 3. „Atypical”, more recently identified (*B. microti*, *B. inopinata*, *B. papionis* and *B. vulpis*). All species are genetically highly related to each other (> 99%). Infections occur among various warm-blooded animal species, marine mammals, and humans. Recently reported *brucellae* from amphibians (worldwide-distributed exotic frogs) are genetically highly diverse and might represent several new *Brucella* species or link between free living soil saprophytes and the pathogenic *Brucella*. Amphibian *brucellae* are capable of causing disease in different frog species ranging from localized manifestations to generalized infections. Frogs represent new and ecologically significant natural host and reservoir.

#### **Conclusions**

New *brucella* strains, hosts and reservoirs makes control of Brucellosis more complicated.

Identification of new, amphibian, *Brucella* species and new hosts and reservoirs, have significant contribution to understanding of evolution of the genus *Brucella* from a soil-associated motile bacterium to a host-adapted pathogen.

To date, there is no evidence that frog's isolates represent a zoonotic threat, but precaution to avoid contacts with potentially infected amphibians until the zoonotic potential is better investigate and understood is useful advice.

**Key words:** brucellosis, new *brucella*, reservoirs.