

NEW *BRUCELLA* SPECIES AND RESERVOIRS – POTENTIAL OF GLOBAL RE-EMERGING ZOOONOSIS

Vaso Taleski

University „Goce Delchev”, Faculty of Medical Sciences, Shtip,
Republic of Macedonia.

Introduction

Brucellosis is one of the most common worldwide re-emerging zoonotic disease. Most of the developed countries has been eradicated Brucellosis, but the disease remains prevalent in regions of Africa, the Middle East, Asia, and Central and South America, as well as in the Mediterranean basin. The geographical distribution of brucellosis is constantly changing with new hosts and reservoirs.

Aim

To present new *Brucella* strains and reservoirs.

Material and Methods

Review and presentation of recent published data, reported and confirmed new *Brucella* strains and reservoirs.

Discussion

The genus *Brucella* comprises several important highly pathogenic species, genetically highly related to each other, which can be divided into the: 1. Classical, terrestrial strains of *Brucellae* (*B. melitensis*, *B. abortus*, *B. suis*, *B. canis*, *B. ovis*, *B. neotomae*), 2. Marine mammals *Brucellae* (*B. ceti* and *B. pinnipedialis*), and 3. “Atypical”, more recently identified species (*B. microti*, *B. inopinata*, *B. papionis* and *B. vulpis*).

B. melitensis contributes to 98% of all human brucellosis cases. Marine mammals *Brucella* have never been documented in humans.

Within the ‘atypical’ *Brucellae*, only *B. inopinata* and the non-classified *Brucella* strain BO2 were isolated from human infections, but their natural hosts are still unknown. *B. microti* is the only species known to persist in soil, which is environmental reservoir of particular interest.

Most recently, amphibians (frogs) had been recognized as new hosts for *Brucella* spp. Some frog’s isolates were identified as “atypical” *B. inopinata* and others as new *Brucella* members. The worldwide distribution suggests that amphibians are not only occasionally infected, but may represent a new, yet undiscovered and ecologically significant natural host. Very probably, frog’s isolates have a reservoir in soil. In addition, these isolates may represent a link between free-living soil saprophytes and the intracellular pathogenic *Brucella*.

Conclusions

Control of Brucellosis became more complicated due novel reservoirs and hosts.

New *Brucella* species as well as “atypical” *Brucella* strains have enhanced understanding of the evolution of the genus from a soil-associated motile bacterium to a host-adapted pathogen. Whilst there is no evidence to date that frog’s isolates represent a zoonotic threat, appropriate measures should be taken to avoid unnecessary contact with potentially infected amphibians until the zoonotic potential of this group is better understood.

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