

Chlamydophila pneumoniae in horses: a seroepidemiological survey in Italy

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SUMMARY

We tested 731 sera from apparently healthy light horses against *Chlamydophila pneumoniae*, by a microimmunofluorescence (MIF) test. To verify cross-reactions with other species of chlamydiae, all sera with an antibody titre ≥ 32 to *C. pneumoniae* were tested against both *C. psittaci* and *C. abortus*. Antibodies to *C. pneumoniae* were detected in 194 out of 731 (26.5%) samples tested, with antibody titres ranging from 32 to 1024. No antibody titre ≥ 32 was detected in sera to *C. abortus*. Only few sera with a high antibody titre to *C. pneumoniae* reacted weakly with *C. psittaci* at the dilution of 1:32.

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Chlamydiae in horses cause asymptomatic infections (Mair and Wills, 1992) or are associated with pneumonia (McChesney *et al.*, 1982), rhinitis (Wills *et al.*, 1990), conjunctivitis (Moorthy and Spradbrow, 1978), polyarthrits (Blanco Loizeiler *et al.*, 1976), hepatoencephalic syndrome (Blanco Loizeiler, 1968), and genital disorders (Herfen *et al.*, 1999). Since the molecular identification of chlamydial species was rarely carried out before the mid 1990s, the range of chlamydial species involved and their pathogenic role in horses is not yet clear. According to the current taxonomy (Everett *et al.*, 1999), three chlamydial species, namely *Chlamydophila pneumoniae* equine biovar,

Chlamydophila psittaci and *Chlamydophila abortus* have been isolated from horses to date. *C. psittaci* and *C. abortus* were detected in some cases of equine abortion (Everett *et al.*, 1999, Henning *et al.*, 2000, Szeredi *et al.*, 2005). With regard to *C. pneumoniae*, Wills *et al.*, (1990) isolated a chlamydial strain (N16) from a nasal swab taken from a horse with a serious nasal discharge. At first the strain was classified as *C. psittaci*. In 1993, Storey *et al.* sequenced the major outer membrane protein (MOMP) gene of the isolate and compared it with the MOMP gene of *C. pneumoniae*, *C. psittaci*, *C. trachomatis* and *C. pecorum*. The analysis revealed that N16 was more closely related to *C. pneumoniae* than to the other chlamydial species.

C. pneumoniae is widespread in humans, with a high seroprevalence in the adult healthy population (Grayston *et al.*, 1990). Symptomatic *C. pneumoniae* infections are represented by bronchitis and pneumonia, and have also been associated with coronary heart disease and reactive arthritis. Since close contacts can be established between man and horse, it is important to con-

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