SEROLOGICAL MONITORING OF BLUETONGUE VIRUS IN WILD RUMINANTS OF THE PESARO-URBINO DISTRICT (ITALY)

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The aim of the study was to evaluate Bluetongue prevalence in wild ruminants of the Pesaro-Urbino district in the Central Italian region Marche, which was characterized, in 2004-2005, by a large circulation of the Bluetongue virus in domestic ruminants, especially due to vaccine serotype 2 (Fig. 3).

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INTRODUCTION

Bluetongue virus infects both domestic and wild ruminants, but the relative epidemiological significance of the latter is still not fully clarified. Viral transmission between wild and domestic animals is an important factor to study, in order to carry out an efficient sanitary control plan.

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MATERIALS & METHODS

✓ Target population: was represented by the whole population of wild ruminants of the Pesaro-Urbino district, which was estimated, by a local census, to be of 17,620.
✓ Sampling: a random sample of ungulates in hunting areas of Pesaro-Urbino district was hunted and selected in summer 2004-2005.
✓ Samples testing: samples of serum collected was analysed by an ELISA test to detect antibodies against Bluetongue virus. ELISA positive animals were further investigated for the presence of viral nucleic acid by an RT-PCR procedure performed on spleen and liver tissue samples
✓ Case definition: an ungulate was considered positive if ELISA and RT-PCR assay were both positive.
✓ Data analysis: MapInfo Professional v. 7.5 was used for geographical representation. Epi Info and Win Episcope 2.0 were used for statistical elaboration.

RESULTS

206 ungulates among roe deer (Capreolus capreolus), fallow deer (Dama dama) and deer (Cervus elaphus) were hunted and selected in 31 of the 36 hunting areas of Pesaro-Urbino district (Fig. 1 and Fig. 2).

ELISA test detected antibodies against Bluetongue virus only in one fallow deer (apparent prevalence 0.49% I. C. 95% 0.12 – 1.77). The RT-PCR procedure employed did not detect viral RNA in the tissue samples examined (Tab 1). Prevalence of infection in wild ruminants, if present, was equal or lower than 1.44%.

CONCLUSION

Prevalence of antibodies against Bluetongue virus in the targeted population of wild ruminants was very low, although the high prevalence found in domestic ruminants in the same area and in the same period. Wild ruminants did not seem to have a role in Bluetongue viral circulation in the Pesaro-Urbino district.

REFERENCES


Fig. 1: Hunting areas and number of ungulates selected in each one.

Fig. 2: Species and number of ungulates sampled.

Fig. 3: Areas of Pesaro-Urbino district with Bluetongue virus circulation in 2004-2005.

Tab. 1: Prevalence observed.

<table>
<thead>
<tr>
<th>Ungulates population</th>
<th>Samples number</th>
<th>ELISA positive samples</th>
<th>ELISA+PCR positive samples</th>
<th>Maximum expected prevalence (I.C. 95%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>17620</td>
<td>206</td>
<td>1</td>
<td>0</td>
<td>&lt;= 1.44 %</td>
</tr>
</tbody>
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