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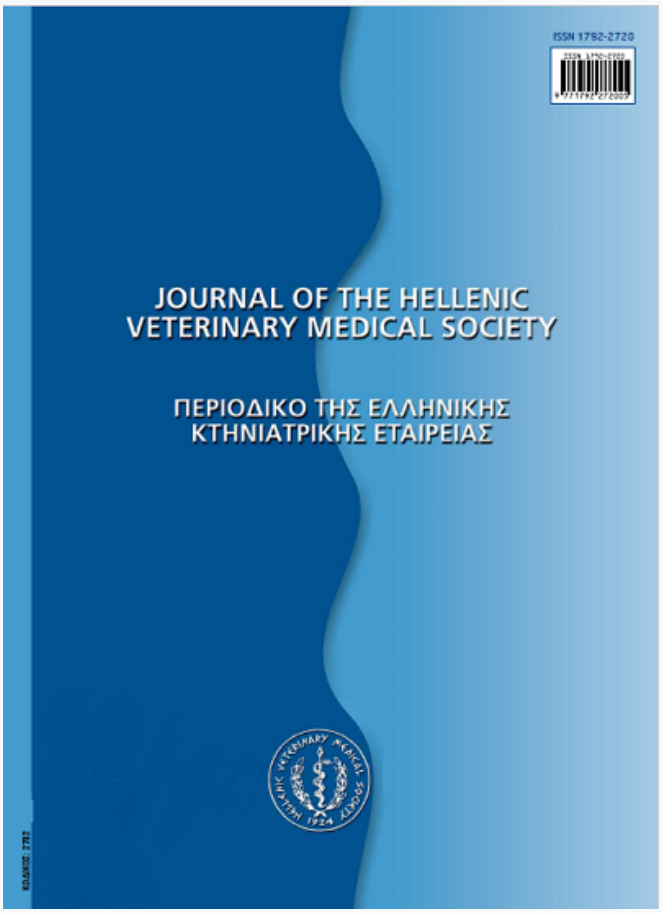

Small Ruminant Lenti-virus infection in imported sheep in Greece

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Small Ruminant Lenti-virus infection in imported sheep in Greece

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Μόλυνση από Lenti-ιούς σε εισαγόμενα πρόβατα στην Ελλάδα

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ABSTRACT. During the last years, a large number of Assaf-E sheep have been brought into Greece from Spain. In total, 57 randomly selected Assaf-E sheep purchased from Spain to five 5 different farms in Greece were examined serologically on arrival for *Small Ruminant Lentiviruses*. Of these, 25 animals were found to be seropositive against *Small Ruminant Lentiviruses*. Taking into account the above findings, we suggest a more strict legislation at the sheep sales.

Keywords: Assaf-E, Greece, sheep, *Small Ruminant Lentiviruses*, Spain

ΠΕΡΙΛΗΨΗ. Πρόσφατα, μεγάλος αριθμός προβάτων φυλής Assaf-E έχουν εισαχθεί στην Ελλάδα από διάφορες ισπανικές εκτροφές. Από αυτά, 57 πρόβατα επιλεγμένα τυχαία από πέντε διαφορετικές Ελληνικές εκτροφές, εξετάσθηκαν ορολογικά για Lenti-ιούς των μικρών μηρυκαστικών κατά την άφιξή τους. Συνολικά, 25 ζώα βρέθηκαν οροθετικά στους παραπάνω ιούς. Λαμβάνοντας υπόψη τα ευρήματα, προτείνουμε την καθιέρωση πιο αυστηρής νομοθεσίας για τις αγοραπωλησίες προβάτων.

Λέξεις ευρετηρίασης: Ελλάδα, Ισπανία, πρόβατα, Assaf-E, Lenti-οί μικρών μηρυκαστικών

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INTRODUCTION

Small Ruminant Lentiviruses (SRLVs) can cause a significant chronic disease with detrimental consequences for animal health and economic viability of sheep flocks, while hosts are infected for life. In adult sheep, the disease shows various clinical manifestations, e.g., chronic interstitial pneumonia (Maedi) (Pritchard and McConnell, 2007), chronic encephalomyelitis (Visna) (Glaria et al., 2012), chronic arthritis (Glaria et al., 2009) and chronic indurative mastitis (hard udder) (Giadinis et al., 2012). Also, reproductive disorders may possibly be caused by the same virus group (Pérez et al., 2010). However, often the infection remains asymptomatic for years and infected sheep can transmit the infection to other animals (Álvarez et al., 2006).

SRLVs can be transmitted by colostrum and milk consumption, by direct contact through respiratory secretions, while trans-placental infection also seems possible (Pritchard and McConnell, 2007). A factor that significantly contributed to the spread of the disease in many flocks seems to be the extensive uncontrolled trading of animals with unknown SRLV status (Peterhans et al., 2004). In Greece, national legislation does not require testing for SRLV. Hence, infection rate remains increased (Eltahir et al., 2006).

The present study describes the trans-boundary introduction of SRLVs from Spain to Greece and aims to alert veterinarians and farmers for the possibility of introduction of this disease from other countries.

MATERIALS AND METHODS

The study was conducted from February 2011 to September 2012 in five sheep farms (F_1- F_5), located in various regions of Greece. Farm 1 was located in Epirus, farm 2 in Macedonia and farms 3-5 in Peloponnesus. All farms had purchased Assaf-E sheep directly from Spain, with no intermediate contact with other animals. On the day of arrival of the imported sheep at the farm, a number of animals was selected at random for blood sampling for subsequent serological testing for SRLV infection. In total, 57 sheep were selected for blood sampling: 18 in F_1, 14 in F_2, 5 in F_3, 10 in F_4 and 10 in F_5.

Blood samples were then transferred to the laboratory; serum was obtained by centrifugation of blood at 2500 *g* for 15 min. and stored at -20 ºC until examination by using a commercially available ELISA test, specifically the CHEKIT-CAEV/MVV ELISA kit (IDEXX, Switzerland). Descriptive statistics were employed to present the results.

RESULTS

Seropositive animals were found in all examined flocks; proportion of flocks with seropositive animals was 1.0000 (95% confidence intervals: 0.4629-1.0000). Prevalence of SRLVs seropositive animals was 0.4386 (25/57) (95% confidence intervals: 0.3098-0.5757). Within farm seroprevalence varied from 20% to 50% (9/18 in F_1, 7/14 in F_2, 2/5 in F_3, 5/10 in F_4, 2/10 in F_5; 95% confidence intervals: 0.0354-0.7986).

DISCUSSION

The national flock of sheep in Greece includes approx. 9 million animals. The country has a strong tradition in dairy sheep farming, with Chios-breed sheep being the most representative high producing indigenous breed (Gelasakis et al., 2013). In recent years, intensively or semi-intensively reared flocks are fast growing, with their farmers choosing to import foreign breeds, as most Greek indigenous breeds have been neglected from genetic improvement programs and have low productivities. Popular imported sheep breeds are Lacaune, East Friesian, Awassi and, in recent times, Assaf-E. These animals are becoming increasingly popular, although no consideration is given to their health status.

There is strong evidence in the available literature that Spain has a high SRLV prevalence in sheep flocks. In recent studies, 77 % of intensively managed sheep flocks in Northern Spain were found seropositive and in over 50 % of Assaf-E flocks the seropositivity being over 60 % (Leginakicoicoa et al., 2006; Polledo et al., 2013). Those findings pro-

vided an interest to examine a sample of imported Assaf-E animals.

Our results are in accord to those in the literature. The findings do not provide evidence that the sheep will develop clinical disease, but highlight its potential. There is possibly an increased susceptibility of the Assaf-E breed for seroconversion of infected animals. In the past, previous studies have also suggested increased susceptibility of some breeds to SRLVs (Sarafidou et al., 2013).

Taking into account, that eradication of SRLV infections is difficult (Peterhans et al., 2004; Pritchard and McConnell 2007), we suggest that national legislation regarding sheep imports into Greece would be revised. Further, we recommend that, in the interim, sheep farmers considering to purchase Assaf-E or other sheep breeds request an examination of sheep for possible SRLV infection. Attending veterinarians should guide flock owners for performing specific examinations of sheep that are brought from other flocks.

CONCLUDING REMARKS

Everybody concerned should be alerted about the possibility of SRLVs introduction into Greek flocks with the import of sheep from other countries, as it has been documented with Assaf-E sheep bought from Spain, in which increased seroprevalence of SRLVs has been detected.

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