Workshop 5

Emergenza specie esotiche

New introduced vector species and the role of the OIE reference centres

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Vector-borne diseases (VBDs) are transmitted by arthropod vectors such as ticks, mosquitoes and sandflies. Zoonoses are vector borne infectious diseases affecting both humans and animals. Prevalence of many VBDs, is increasing worldwide, while other VBDs are emerging or reappearing in countries where they have never been found or were considered eradicated. For this reason, they are considered emerging diseases.

VBDs distribution is closely related to the one of their vectors that is affected by environmental and climate changes, population movements, trade, urbanization. Introduction of exotic vector species can contribute to new pathogen introduction or may affect dissemination of already present pathogens. In any case, adaptation and establishment of a vector in a new area increase the risk of new diseases.

The aim of this talk is focusing the attention to the possible implications related to new vectors species introduction in a new area.

At the Istituto Zooprofilattico della Sicilia three OIE Reference centres for vector-borne diseases are present (OIE Reference Centre for Babesiosis, for Theileriosis and for Leishmaniosis). They are involved in the implementation of vector sustainable control strategies, assistance in surveillance for both carriers and diseases, diagnosis and case management.

Some of the factors affecting vector distribution can be limited using prevention and control measures for animals and vectors. However, more complex it is the case of unlawful introduction of animals or the movement of wild animals and migratory birds.

Just to provide some examples, on 2008 an illegal traffic of tortoises from Northern Africa was discovered in Sicily. The intervention allowed the recovery of about 1400 live *Testudo graeca* individuals. The animals were infested by *Hyalomma aegyptium*, a tick species rarely found in the Italian territory, but that can be occasionally found due to illegal

importation of its hosts. *H. aegyptium* is a vector for several pathogens as *Rickettsia aeschlimannii, R. africae* and *Theileria annulata*.

Climate changes could also allow *Rhipicephaline* adaptation to European transalpine climate with the consequent spread of diseases such as babesiosis, theileriosis, anaplasmosis and rickettsiosis. The similarity in the habitat could enable the tick *Hyalomma anatolicum anatolicum* to establish in our territory. The tick is widely distributed in central Asia, Middle and Near East, Arabia, southeastern Europe and north Africa and is a vector of CCHFV, *Theileria* and *Babesia* species, *Anaplasma marginale* and arboviruses.

As concerning sandflies, the introduction of exotic species in our territory could determine new *Leishmania* species introduction, as for example *Leishmania major*, the etiologic agent of a cutaneous leishmaniasis spread in Central and North Africa, Middle East and Central Asia.

Control of new vector species introduction is therefore essential to improve risk prevention and the health status for both animals and humans.

References

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2. Ferrantelli V. et al. VI International Conference on Tick and Tick-borne Pathogens. Buenos Aires (Argentina), 21-26 September 2008.