

ABSTRACTS

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[P22] INTEGRATED SURVEILLANCE ON TICK-BORNE DISEASES IN PIEDMONT REGION, NORTHWESTERN ITALY

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Ixodid ticks and tick-borne diseases (TBD) are expanding their geographical range in Europe. In northwestern Italy, a marked increase in tick abundance has been observed in the past decade, together with more frequent reports of Lyme borreliosis. A collaborative effort involving veterinarians, park rangers, medical doctors, citizens, has been developed in Piedmont region for the past ten years, aiming at: 1. assessing the distribution and abundance of ticks and transmitted pathogens; 2. detecting new health threats posed by ticks; 3. increasing the awareness on ticks and health-related problems among citizens and categories at risk. The initiatives include field work (tick collection from vegetation, animals and human patients; sera collection from wildlife) and laboratory work, and educational/public engagement activities.

Up to now, our research/surveillance initiatives enabled to describe tick and TBD distribution in several areas in the region, highlighting habitats at risk for tick-borne diseases and the shift of the altitudinal limits for ticks in mountain areas (1, 2). Unexpected zoonotic agents in ticks have been described (e.g. *Borrelia miyamotoi* and *Neoehrlichia mikurensis*). Screening of wildlife sera for the presence of tick-borne encephalitis virus (TBEV) antibodies is ongoing, and yielded no positive result so far; TBEV is considered absent in Piedmont, but the region is at risk due to the increased vector abundance and TBEV spread in bordering areas. Educational activities enhanced the awareness on ticks and TBD risk among citizens; for example, use of repellents and wearing light colours are now routine protective strategies adopted by forest rangers in some natural parks. Information material is available on regional institutional websites and distributed in parks (3).

Our activities could be adopted in other contexts, especially in areas of recent tick spread, where no surveillance is carried out and the risk of TBD needs to be assessed. Our experience shows that integration of data from different sources (environment, humans and animals) can help in the surveillance of TBD. Knowledge about the spatio-temporal distribution and abundance of ticks and transmitted pathogens may indeed provide relevant information for disease prevention, and can help physicians in diseases diagnosis. This is particularly important in areas recently invaded by ticks, where the awareness level on the risk of tick bites and TBD is low, also among healthcare workers. Moreover, education of citizen is key to promote the adoption of preventive measures and habits.

Funding is critical, since our surveillance activities have been carried out thanks to research funding of specific projects only. Stable, possibly multi-year dedicated funding, included into regional prevention plans, would facilitate a better planning and implementation of surveillance activities. Secondly, our initiatives would benefit from a greater involvement of medical doctors, who could be key to obtain reliable data on the incidence of bite events and TBD, and to provide updated and evidence-based information to patients. In general, a greater collaboration among different professionals, with the creation of a stable interdisciplinary working group on vector-borne zoonoses, would enhance communication and knowledge exchange, and increase the effectiveness of surveillance.

1 Garcia-Vozmediano et al. (2020) Ticks Tick Borne Dis 11(5):101489.

2 Audino et al. (2021) Parasit Vectors 14(1):136.

3. <https://www.parchialpicozie.it/news/download/1356/>