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INTERNATIONAL WHALING COMMISSION

Update of Pathogens identified in stranded cetaceans in Canary Islands (non-published data)

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Institute of Animal Health. University of Las Palmas de Gran Canaria. Canary Islands. Spain

There is a growing concern about the impact that infectious diseases can produce on animal health and conservation in wildlife populations. The Canary Islands have a geographically strategic position, since they are located between three continents: Europe, America, and Africa. Thus, regular monitoring for the presence of pathogens in free-ranging cetaceans in this particular area of the Central Atlantic is essential to detect the occurrence and distribution of infectious diseases and to predict novel worldwide epidemics. The appearance, disappearance, and re-emergence of pathogens in cetaceans, with both epidemic potential and high mortality rates have threatened the global health status of cetaceans for decades. These include viruses [Cetacean morbillivirus (CeMV), herpesviruses]; bacteria (*Brucella* spp., *Bartonella henselae*, *Erysipelothrix rhusiopathiae*, *Listeria monocytogenes*); and protozoan (*Toxoplasma gondii*), among others. Both retrospective and prospective screening for the presence of these pathogens is performed on banked tissue from stranded cetaceans in the Canary Islands (general surveillance), since 1996 to date. All the major organs and lesions are routinely collected during the necropsy, which are kept in two different formats: fixed in a solution of 4% neutral buffered formalin for histological and immunohistochemical analysis; and stored frozen at -80 ºC for molecular microbiology. As a result, different microorganisms have been detected, with a wide range of health implications in their respective hosts. *Brucella* spp. was detected in 7 animals from 4 different species: bottlenose dolphin (*Tursiops truncatus*) (n=2), striped dolphin (*Stenella coeruleoalba*) (n=2), Atlantic spotted dolphin (*Stenella frontalis*) (n=2) and Blainville's beaked whale (*Mesoplodon densirostris*) (n=1). In all these cases the brain was the target organ, except for the beaked whale, from which the glenohumeral joint was affected. *Erysipelothrix rhusiopathiae* was detected in the lung, mesenteric lymphonode and brain from a bottlenose dolphin stranded in 2010. Concerning the presence of CeMV, 16 animals resulted positive in one or more tissues.

The majority of the specimens belonged to the striped dolphin species (n=7) followed by the short-finned pilot whale (*Globicephala macrorynchus*) (n=4). The common dolphin (*Delphinus delphis*) and the Risso's dolphin (*Grampus griseus*) were represented by two specimens, respectively; and the bottlenose dolphin for one animal.

Two different strains of CeMV have been detected among the positive cases: the dolphin morbillivirus (DMV) and the pilot whale morbillivirus (PWMV). The latter was exclusively detected in the short-fined pilot whale species (the first detection date from 1996). The Canary Islands is the only region in the world where this strain has been detected in this species of pilot whale. Herpesviruses have been detected in 36 animals belonging to 11 different species of the Delphiniidae, Kogiidae, and Ziphiidae families. *T. gondii* was exclusively detected in the Atlantic spotted dolphin species (n=7), represented by systemic or brain infections. In addition, the trematode *Nasitrema* spp. has been detected in the brain of two animals from different species: bottlenose dolphin and Blainville's beaked whale.