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Marine Toxicology: New challenges for Poison Control Centers

Between 2010 and 2014, the Marseille poison center had been requested by various structures at the national and European levels to make a synthesis of the new dangers induced by the toxic marine organisms. At that time, the French Metropolitan Coast was directly concerned by cumbersome toxic invaders: in Aquitaine with the Portuguese-man-of-war (Physalia sp.) swarming in summer; in Brittany with the sea lettuce of the genus Ulva (mounds in putrefaction on the beaches produce hydrogen sulfide); in Provence with blooms of tropical dinoflagellates of the genus Ostreopsis producing "palytoxin-like" molecules able to contaminate the sea water but also the surrounding air. If these health problems with heavy economic impacts persist a few years later, what more can we say in 2018? Undeniably, the initial concerns are confirmed: the direct (overexploitation of fishing sources, water pollution, etc.) or indirect (global warming) anthropogenic modifications of aquatic biotopes are at the origin of new marine toxicological problems to which poison control centers are faced. The list of these new medical challenges is long: the venomous lion fish of the Indian Ocean (genus Pterois) has invaded the West Indies and generates many envenomations; the Red Sea Lessepsian pufferfish Lagocephalus sceleratus colonized the entire Mediterranean in record time (confirmed presence in Spain in 2017) and the consumption of its tetrodotoxin-rich flesh is potentially lethal; the consumption of sea violets of the genus Microcosmus is at the origin of unexplained cerebellar syndromes in Provence but also in Croatia; the presence of ciguatera is now confirmed at the gates of Europe (native cases reported for the first time in Madeira and the Canary Islands); soft corals of the genus Palythoa or Zoanthus have become undesirable guests in marine aquaria because these invasive invertebrates can induce severe respiratory and ocular symptoms in aquarists; Cyanobacterial blooms in fresh and/or brackish waters are multiplying with the production of neurotoxins or nephrotoxins with consequences in veterinary and human medicine. These subjects are fascinating but worrying because they are witnesses to ecological imbalances with tangible effects that we did not imagine a few years ago.

Speaker Biography

Luc De Haro is a clinical toxicologist working in the Marseille Poison Centre where he is the head of the Toxicovigilance unit specialized in the management of patients poisoned or envenomed by natural toxins (Mushrooms, plants or animals toxins including marine toxicology).

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