

Emerging Viral Diseases of Aquatic Animals: Regional Perspective

Alaa Eldin Eissa*

Department of Fish Diseases and Management, Faculty of Veterinary Medicine, Cairo University, Giza, Egypt

***Corresponding author:** Alaa Eldin Abdel Mouty Mohamed Eissa, Department of Fish Diseases and Management, Faculty of Veterinary Medicine, Cairo University, Giza, Egypt, Email: alaa.eissa@vet.cu.edu.eg

Letter to Editor

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The expanding rise in aquaculture “blue revolution” to compensate the catastrophic overexploitation of global fisheries have unintentionally changed the dynamics of natural biotic elements (pathogenic or non pathogenic) in aquatic environment. Such changes have widely involved the introduction of new aquatic species into new environments with subsequent transfer of their associated flora which imposed deep negative impact on the local aquatic species in this environment. Moreover, the swiftly evolving environmental pollution has potentially triggered colossal forms of climate changes such as global warming, sea level rise, destruction of breeding habitats, disruption in genetic pools of vulnerable aquatic animals, mass migration of invasive aquatic species and finally emergence/resurgence of pathogens causing unexpected epidemics among aquatic creatures. Further, the outgrowing maritime transport, development of multi-species integrated aquaculture systems, domestication of marine mammals offshore, ease in illegal trafficking/smuggling of live aquatic animals and their products from country/region to another are all the main triggering factors in emergence of diseases among aquatic creatures. Aquatic animal epidemiologists have proposed the following criteria for a disease to be considered as an emerging disease: (i) new or previously

unknown disease; (ii) known disease appearing for first time in a new species (expanding host range); (iii) known disease appearing for the first time in a new location (expanding geographic range); and (iv) known disease with a new presentation (different signs) or higher virulence due to changes in the causative agent). Thus, several viral diseases have been considered emerging diseases of fish, shellfish and marine mammals when the emergence criteria have been utilized. Regionally, Tilapia lake virus (TilV) Spring viremia of carp (SVC), Koi herpes virus (KHV), Red sea bream iridovirus (RSIV), Viral nervous necrosis (VNN) of grouper and recently tilapia, White spot syndrome virus of Shrimp/crayfish (WSSV), Taura syndrome virus of shrimp (TSV), Yellow tail disease virus (YTDV), Influenza virus marine mammals (avian, swine, human) (IVD), West Nile virus (WNV) of marine mammals and Morbilliviruses of marine mammals (MV) are all potential emerging viral diseases in the regional aquatic environments.

Keywords

Emerging viruses; Fish viruses; Shellfish viruses; Aquatic animals; Marine mammals