Decreased Of Infectivity And Replication Of Influenza Virus A (H1N1) From Surfaces

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Background. The influenza A virus (IAV) causes high morbidity and can cause pandemics with high mortality. It has two surface glycoproteins, hemagglutinin (HA) and neuraminidase (NA). The virus has the ability to agglutinate erythrocytes from different animal species and has high rates of genetic and antigenic variation. The virus spreads easily in droplets expelled in respiratory secretions and infects surfaces and objects quickly where it can remain for hours, and these objects become sources of infection. For the elimination of these viruses the disinfectants used are often toxic to humans, making it necessary to have alternative products. The electrolyzed solution of superoxide (ESS) is an effective antiseptic against bacteria, but its action on IAV is unknown. **Objective.** To evaluate the effect of ESS on the infectivity and replication of IAV. **Methods.** Cytotoxicity tests were performed with canine cells. MDCK cells were used to propagate and titrate the virus by plaque assay; mixtures were made containing different concentrations of the ESS and viruses. ECP was assessed by plate counts and to detect viral antigens (HA) immunofluorescence and Western blot assays were used. To assess changes in hemagglutinating capacity, hemagglutination tests were performed. To determine the expression of the NA gene, RT-PCR was used. As controls for infection, IAV infected cells without ESS were used, and the negative controls were uninfected cells. **Results.** It was observed that the ESS is not cytotoxic to canine cells, clearly decreased hemagglutinating capacity and was not detected the NA gene, and ESS inhibited 96.91% of the replication of IAV in 15 min. **Conclusions.** The results indicate that the ESS inhibited the replication and infectivity of IAV. So the ESS represents an effective option for elimination of the virus from surfaces.