

Against the New H1N1 Influenza (Swine Influenza): Vaccinate or Don't Vaccinate (All)? That is Currently the Question!

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Beginning in April 2009, a new variant of influenza virus A, subtype H1N1, initially discovered in Mexico and the USA, has been causing a wave of influenza. This new strain at first attached itself to the seasonal winter influenza wave of influenza H1N1 and H3N2, but it then developed into a pandemic strain. This virus is currently spreading simultaneously over the northern and southern hemisphere as well as the tropics – independent of season [1]. Several analyses have shown that the new pandemic H1N1 (2009) virus in domestic pigs emerged from genetic elements of the old human H1N1 and H3N2 viruses as well as from North American and European porcine H1N1 viruses, probably as “reassortment” of successive double infection. These results actualize what the influenza virologist has long feared: not birds (avian influenza) but rather mammals, such as swine, represent, as in the past (H2N2, H3N3), the greatest threat for spreading zoonothronotic influenza infections to humans [2].

In terms of influenza vaccination, everything has been “business as usual”. Due to the continuous antigenic drift of influenza A viruses, the vaccines must be verified each year and adapted for epidemiological relevance. Certainly, in the case of the swine-origin influenza A/H1N1 virus, the drift has been so advanced (when compared to the H1N1 virus circulating previously in humans) that only the relatively senior portion of the world's population (> 60 years) can be considered to have protective antibodies [3, 4]. These antibodies were probably acquired from exposure to H1N1 infection prior to 1957, before this virus (swine-origin influenza) was suppressed for 20 years with the outbreak of the Asiatic influenza pandemic caused by H2N2.

To date, the course of the new influenza has been astonishingly mild, apart from the first wave of illness in Mexico in April 2009 and individual local outbreaks, such as those in Costa Rica. The so-called high death rate that was registered by the health authorities among the (older) population of affected regions was actually rather lower when compared to that resulting from the influenza waves of the last years.

However, it should be noted that the manifestation index increases halfway through the winter of the year. This is partly the case in Argentina at the present time, but not in neighboring Chile. In principle, therefore, there is no urgent reason to implement principal changes to recommended vaccination programs, which allow for the protection of special immunocompromised people (pregnant women, the aged, individuals with a pre-existing infection of the respiratory system and cardiovascular system, diabetes and adiposity). The vaccination of individuals in community services and professional groups (medical personnel, the police, fire service, teachers and the staffs of day care centers, among others) who may be exposed to influenza should be emphatically recommended and carried out as normal procedure [5]. Based on past experience with vaccination attendance, a voluntary-based general mass vaccination of the populace will scarcely be attainable despite widespread and/or stirred-up fears. One should also take into consideration that an individual who survives a wild virus infection acquires better – even though not prolonged – immune protection. This protection is possibly not only due to neutralizing antibodies but also because cytotoxic T lymphocytes (cross-reactive against conserved virus antigens) are additionally stimulated [6]. Corresponding measurements are unfortunately not available in humans. Only a vaccination participation of > 80% of the population can effectively terminate virus circulation and thus eliminate

Infection 2009; 37: 379–380

DOI 10.1007/s15010-009-3509-z

Published online: September 18, 2009

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the possibility of the virus to eventually develop increased pathogenicity due to mutation and reassortment with other virus strains. This may be achieved if the manifestation index of the swine influenza drastically rises. Of course, one should also always expect such mutations in conventional influenza and other viruses.

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