SWINE FLU: DOES ONE DOSE SUFFICE?

As the swine flu pandemic unfolds, it appears that younger people are disproportionately susceptible. The median age has been 12 and 21 years in the US and Australia, respectively. Seventy nine percent of laboratory proven infections are below 30 years of age and only 2 % are above 60 years. The reason seems to be exposure to the 1918 virus or its descendants in the 1920's and 1930's. Therefore people born before 1930 have shown 100% antibody response when exposed to the novel H1N1 virus as against just 34% response in people born after 1950.

A study from Australia comparing the immune response in >50 years olds versus <50year olds after a single 15µg dose of unadjuvanted 2009 H1N1 vaccine showed very robust immune response in both groups. The high level of immune protection afforded by a single 15µg dose should improve the coverage and logistics of mass H1N1 vaccination programs *(www.nejm.org September 10, 2009; Scientific American 11 September 2009).*

SOMATOSTATIN VACCINE

Building on pioneering research by Russian scientists, Braasch Biotech LLC has recently developed a second generation vaccine which could be effective in a variety of unusual diseases. This vaccine induces antibodies which attenuate but don't entirely neutralize the inhibitory functions of somatostatin. Hence it stimulates the body to release growth hormone (GH) and insulin like growth factor-1 (IGF-1). The vaccine is considered to be a potential way to treat growth hormone deficiency, obesity, diabetes, as well as potentially several other important IGF-1 responsive neuronal disorders such as Rett syndrome.

Initial preclinical trials in an obese mouse model have shown significantly lower weight gain in mice who were vaccinated despite being on a high fat diet. While all mice ate a diet with 6 times the fat content of a normal diet, at the conclusion of the study, vaccinated mice gained less than half the weight of placebo vaccinated mice. In terms of human weight, this is equivalent of a 200 pound individual gaining 30 pounds on a high fat diet, while the vaccinated individual would only gain between 8-14 pounds. The mechanism is considered to be the elevated IGF-1 levels which contribute to fat burning.

Besides refining the vaccine and its formulation, Braasch, in conjunction with the University of Iowa's Center for Biocatalysis and Bioprocessing, has developed scalable manufacture and isolation processes to provide uniform vaccine for laboratory testing. The new vaccine is designed for once-per-month treatment versus treatment regimens using growth hormone drugs, which typically require daily injection. *(Medical News Today 1 September 2009)*

VACCINE AGAINST COCAINE ADDICTION

There is no good drug useful for cocaine de-addiction. Hence a novel approach has been tried. A vaccine which induced antibodies against cocaine was recently tested in humans. The antibodies bind to the cocaine molecule and prevent it from crossing the blood brain barrier and thus prevent the subsequent high. A placebo controlled double blind trial of the vaccine in 94 drug abusers showed a 53% reduction in cocaine usage for more than half of the trial period. With some improvements in the vaccines constituents the efficacy is expected to go upto 80%. The real challenge will be to enlist the help of big pharmaceutical companies. *(Scientific American 6 October 2009)*

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