

Book Review

Koff WC, Kahn P, Gust I: Aids Vaccine Development. Challenges and Opportunities.

151 pp, Caister Academic Press, 2007. ISBN 978 – 1 – 904455-11-0, \$99, £49, EUR 89.

It has been estimated that 40 million people were living with HIV/AIDS in 2005 and that 25 million have already died since the epidemic began. Every day, there are 14,000 new HIV infections and 8000 deaths due to AIDS. In some Sub-Saharan African countries, the HIV prevalence rate is greater than 30% and life expectancy has decreased by nearly 50%.

There is no doubt that the HIV/AIDS pandemic is one of the worst public health issues that humanity is facing today. Since the discovery of HIV more than 25 years ago, an enormous amount of research has been devoted to the virus, making it by far the virus we know most about. It is all the more extraordinary, therefore, that the most successful intervention which has halted the spread of viral epidemics in the past, namely the development of a vaccine, has completely failed in the case of HIV.

This timely book reviews in considerable detail the numerous scientific challenges and problems that have made the search for an effective AIDS vaccine so far unsuccessful. The editors have secured the help of over 40 internationally known experts in AIDS vaccine research and have assembled a 19-chapter volume that is essential reading for all those interested in current attempts at developing an AIDS vaccine.

The book is divided in five parts. The first part consists of two chapters that give a global overview of the epidemic and summarize the challenges associated with AIDS vaccine development. The second part consists of three chapters that describe the biology of early HIV infection and our current understanding of protective immunity to HIV, including what we have learned from animal models. The third part is devoted to preclinical vaccine development and contains five

chapters that discuss the antigenic diversity of the virus, the choice of vaccine immunogens, the properties of neutralizing monoclonal antibodies, and cell-mediated and mucosal immunity. Part 4 contains five chapters that describe the main candidate vaccines that have been tested in clinical trials since 1987, emphasizing ongoing Phase I and II trials. The first two Phase III HIV vaccine efficacy trials completed in 2003 showed that the two candidate vaccines that were tested did not significantly protect against HIV infection and had no impact on viral load in subjects who became HIV-infected post-vaccination. Data from two ongoing efficacy trials will not be available until 2009 and it is only in the decade 2010–2020 that it will become clear if any of the current candidate vaccines will provide a significant public health benefit.

Several chapters discuss the difficulties of conducting efficacy trials in developing countries and emphasize how essential it is to do this type of work in the resource-poor regions that are hardest hit by the epidemic. Part 5 devotes four chapters to important issues that often receive insufficient attention in discussions of vaccine science, namely vaccine scale-up and manufacturing, stringent regulatory issues and the need to speed up the transfer of new vaccines from developed to developing nations

The book contains about 500 scientific references and a wealth of up to date information. It is highly recommended for everyone interested in what is no doubt one of the most challenging public health issues of the 21st century.

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