

BACKGROUND

Prolongation of life expectancy has represented one of the humanity's greatest triumph in the 20th century, This unprecedented success is now one of society's greatest challenges in the century ahead of us. Improved child survival, reduced mortality rates, and decreasing fertility rates worldwide, is resulting in a rapid ageing of the world's population. This ageing is evident worldwide, and particularly evident in developing countries where the elderly population is predicted to quadruple over the next 25 years at which time it will represent over 25% of the total population.

The waning of the immune responsiveness in the elderly (immune-senescence) renders this population increasingly susceptible to infectious diseases such as influenza and pneumonia, leads to resurgence of latent infections such as herpes zoster, and also to infection by opportunistic organisms such as Clostridium and Staphylococcus. These infections contribute significantly to morbidity in this age-group, and frequently lead to irreversible frailty and dependency. Vaccination could play a role in reducing susceptibility to these infectious diseases, however the lower capacity of elder individuals to respond to these vaccines also diminishes the efficacy of vaccination in this population.

A number of approaches are being explored to use vaccination more effectively in this population, including tailoring vaccines for the elderly, using modified routes of vaccination and also modified schedules. Developing these approaches into novel products and into more appropriate policies on immunization of the elderly is hampered by a lack of knowledge of the factors at the basis of immune-senescence. Some studies have suggested that exposure to chronic viral infections such as cytomegalovirus (CMV) may accelerate the senescence of the immune response. In developing countries chronic viral infection may be more frequent and more persisting than in industrialized countries. This could potentially lead to earlier onset of immune-senescence which may translate into an increased susceptibility to various infections, such as influenza, malaria, TB, leishmania, helminth infections and pathogen-induced diarrhoea.

Developing and implementing vaccines to control infectious diseases in the elderly will require a more thorough understanding of the immunological mechanisms underlying the immune-senescence across different populations, and how this is modulated by environmental parameters such as exposure to infectious agents.

The Conference's strategic objectives include:

1. Review and discuss about the current knowledge of the mechanisms of the immune-senescence and how this affects the response to vaccines. Highlight the current gaps in our knowledge and discuss the studies which should be undertaken to fill them.
2. Review and discuss about the current knowledge of the epidemiology of infectious diseases in the elderly in developing countries. Highlight the gaps and discuss the studies needed
3. Review and discuss the tools for immunological parameters which may be predictive of immune-senescence and of vaccine responsiveness / efficacy at the level of T-cell populations, B-cell responses and of innate immunity.
4. Discuss novel approaches (immune-potentiators, dosages, delivery systems, etc) to counteract immune-senescence and to develop novel / improved vaccines better targeted to the elder age.
5. Highlight the need for studies to evaluate the burden of immune-senescence in developing countries, and the potential strategies to reduce this burden.



Aging and Immunity, Siena, Novartis Campus

September 21-23, 2009

Monday September 21, 2009

16.00 - 17.00	Registration	
17.15 - 17.45	Welcome Address and Objectives	Christophe LONGUET Rino RAPPUOLI
17.45 - 18.15	Keynote lecture: Aging, quality of life and quality of knowledge	Antonio LANZAVECCHIA
19.00	Transportation to Welcome Dinner	

Tuesday September 22, 2009

Session 1 The problem and the need Chaired by Martin Friede

08.30 - 08.50	Better knowledge for better development and better implementation: the WHO perspective	Martin FRIEDE
08.50 - 09.10	Discussion	
09.10 - 09.30	The burden of disease in the elderly: the industrialized countries perspectives	Jean-Pierre MICHEL
09.30 - 09.50	Discussion	
09.50 - 10.20	Coffee Break	
10.20 - 10.40	The disease burden in the elderly: the developing countries perspectives	Karl HEINZ KRAUSE
10.40 - 11.00	Discussion	



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Session 2.a Life and death of immune competence in elderly Chaired by Beatrix Grubeck-Loebenstein

11.00 - 11.20	Thymic events in T-cell differentiation with aging	Richard BOYD
11.20 - 11.40	Discussion	
11.40 - 12.00	Naive,effector and memory CD8 T-cells in old age	Beatrix GRUBECK LOEBENSTEIN
12.00 - 12.20	Discussion	
12.20 - 14.00	Lunch	
14.00 - 14.20	Function and diversity of CD4 T-cell pool in old age	Jorg GORONZY
14.20 - 14.40	Discussion	
14.40 - 15.10	Coffee Break	

Session 2.b Life and death of immune competence in elderly Chaired by Jorg Goronzy

15.10 - 15.30	B-cell function in elderly	Bonnie BLOMBERG
15.30 - 15.50	Discussion	
15.50 - 16.10	Dendritic cells and aging	Daniel GOLDSTEIN
16.10 - 16.30	Discussion	
16.30 - 16.50	Innate immunity and aging	Rafael SOLANA
16.50 - 17.10	Discussion	



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Session 3 **Genetics and environment: a role in immune-senescence ?** Chaired by Jacques Louis

17.10 - 17.30	Chronic infections and immunosenescence? Should we vaccinate?	Janko NIKOLICH-ZUGICH
17.30 - 17.50	Discussion	
17.50 - 18.10	Enzymatic correction of age-dependent defects in T-cell activation	Richard MILLER
18.10 - 18.30	Discussion	
19.00	Dinner	

Wednesday September 23, 2009

Session 4 **Which vaccines for the elderly?** Chaired by Giuseppe del Giudice

08.30 - 08.50	New influenza vaccines in the elder	John TREANOR
08.50 - 09.10	Discussion	
09.10 - 09.30	Pneumococcal vaccine in the elder	L.H. HARISSON
09.30 - 09.50	Discussion	
09.50 - 10.10	Zoster vaccine in the elder	Myron LEVINE
10.10 - 10.30	Discussion	
10.30 - 11.00	Coffee Break	



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Session 5

How to counteract immune-senescence?

Chaired by Janko Nikolich-Zugich

11.00 - 11.20	Adjuvants	Giuseppe DEL GIUDICE
11.20 - 11.40	Discussion	
11.40 - 12.00	Other immunopotentiators	Richard ASPINALL
12.00 - 12.20	Discussion	
12.20 - 14.00	Lunch	
14.00 - 14.20	Dose and delivery	Françoise WEBER
14.20 - 14.40	Discussion	
14.40 - 16.00	Concluding discussion panel and meeting closure	Beatrix GRUBECK LOEBENSTEIN

