Antigen specific active immunotherapy: Quo vadis?

Frank O. Nestle
Department of Dermatology, University of Zurich, Switzerland

The concept of using a patient's own immune system to fight a tumour is very attractive. The successful manipulation of the immune system in any disease setting is a first step in this direction. Over the past 10 years there has been a revolution in our understanding and therapeutic approach to inflammatory diseases such as rheumatoid arthritis, inflammatory bowel disease or psoriasis. Blocking single cytokines or interfering with cell surface molecules on T cells have a dramatic impact on the clinical outcome of these chronic inflammatory diseases [1].

Have these therapeutic successes advanced our ability to modulate the immune system with the aim to fight cancer? One of the strongest arguments that cellular effectors of the immune system are able to fight cancer is the well known Graft versus Leukemia effect [2]. It has been also demonstrated that infusion of soluble effectors of the immune system, ie antibodies are able to destroy cancer cells [3]. These examples provide a sound basis for the view that effectors of the immune system are able to fight cancer.

Adamina and Oertli review the last decade regarding antigen specific active immunotherapy (ASAI), which started with the discovery of tumour antigen specific antigens with special emphasis on melanoma [4]. They provide an overview of the technologies used and the progress made during this time period. They also discuss shortcomings of current immunotherapy approaches and potential ways to improve those. ASAI and cancer vaccination aim to induce a protective immune response against cancer by injecting tumour antigens plus adjuvant. Adoptive immunotherapy relies on the passive infusion of immune effectors such as T cells or antibodies. The molecular understanding and approach of ASAI has made considerable progress in the last ten years [5]. While the general approach in the 1970's and 1980's was to inject sometimes ill-defined tumour cell preparations into patients and hoping for a therapeutic response, the molecular definition of tumour antigens has opened new ways of tumour immunotherapy in the 1990's and the current century. This development combined with better ways of monitoring a patient's immune response during ASAI [6] has provided a basis for the scientific assessment of ASAI. It has been convincingly demonstrated that ASAI is able to induce tumour antigen specific immune responses in cancer patients. However, apart from isolated clinical responses in early pilot trials, large phase III trials have yet to prove the clinical efficacy of ASAI. One area where ASAI might be successful is the adjuvant setting, when all detectable tumour is resected [7]. Apart from these developments there are also obstacles on the road for successful tumour immunotherapy. ASAI depends on a complex interplay of variables including dose, route of administration, immunization schedule, choice of tumour antigen and adjuvant. Furthermore, immunological endpoints might not always correlate with clinical endpoints [8].

In conclusion, the potential of ASAI is far from being fully exploited. Steps have been taken in the right direction and will hopefully lead to improved therapeutic approaches for patients suffering from cancer.

Correspondence:
PD Dr. med. Frank O. Nestle
Department of Dermatology
University of Zurich
CH-8091 Zurich
Switzerland
E-Mail: frank.nestle@access.unizh.ch

References
The many reasons why you should choose SMW to publish your research

What Swiss Medical Weekly has to offer:

• SMW’s impact factor has been steadily rising, to the current 1.537
• Open access to the publication via the Internet, therefore wide audience and impact
• Rapid listing in Medline
• LinkOut-button from PubMed with link to the full text website http://www.smw.ch (direct link from each SMW record in PubMed)
• No-nonsense submission – you submit a single copy of your manuscript by e-mail attachment
• Peer review based on a broad spectrum of international academic referees
• Assistance of our professional statistician for every article with statistical analyses
• Fast peer review, by e-mail exchange with the referees
• Prompt decisions based on weekly conferences of the Editorial Board
• Prompt notification on the status of your manuscript by e-mail
• Professional English copy editing
• No page charges and attractive colour offprints at no extra cost

Editorial Board
Prof. Jean-Michel Dayer, Geneva
Prof. Peter Gehr, Berne
Prof. André P. Perruchoud, Basel
Prof. Andreas Schaffner, Zurich
(Editor in chief)
Prof. Werner Straub, Berne
Prof. Ludwig von Segesser, Lausanne

International Advisory Committee
Prof. K. E. Juhani Airaksinen, Turku, Finland
Prof. Anthony Bayes de Luna, Barcelona, Spain
Prof. Hubert E. Blum, Freiburg, Germany
Prof. Walter E. Haefeli, Heidelberg, Germany
Prof. Nino Kuenzli, Los Angeles, USA
Prof. René Lutter, Amsterdam, The Netherlands
Prof. Claude Martin, Marseille, France
Prof. Josef Patsch, Innsbruck, Austria
Prof. Luigi Tavazzi, Pavia, Italy

We evaluate manuscripts of broad clinical interest from all specialities, including experimental medicine and clinical investigation.

We look forward to receiving your paper!

Guidelines for authors:
http://www.smw.ch/set_authors.html

All manuscripts should be sent in electronic form, to:
EMH Swiss Medical Publishers Ltd.
SMW Editorial Secretariat
Farnburgerstrasse 8
CH-4132 Muttenz

Manuscripts: submission@smw.ch
Letters to the editor: letters@smw.ch
Editorial Board: red@smw.ch
Internet: http://www.smw.ch

Impact factor Swiss Medical Weekly

Schweiz Med Wochenschr (1871–2000)
Swiss Med Wkly (continues Schweiz Med Wochenschr from 2001)