Rapidly changing endocrine oncology research: personal reflection of the past, present and future times

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My 20 years in prostate cancer research may be a good opportunity to critically re-analyze previous and current times and to understand that many personal interactions occur as a consequence of events which are non science-related. For a young researcher who originates from a family with no medical background, such as mine, it has been perhaps easier to develop novel concepts in a research field which I selected during medical studies on the basis of an interest in hormone action.

My research philosophy in 90s was, perhaps a typical for a European, strongly influenced by initial contacts in the U.S. Scientific conferences in North America attracted also many people from the world of business and politics. In fact, one of the events which opened new perspectives in research to me was a conference organized by the National Institute of Health in Washington DC in the national historical landmark, hotel Mayflower. There was not only science, but also a special atmosphere reminiscent to the old world of 19th century which made this conference so memorable. As a speaker, I had the opportunity to interact with many leaders in the field, such as Donald Tindall and Leland Chung during my earlier research activities. Meetings of CaP CURE (now Prostate Cancer Foundation) in a unique atmosphere of Lake Tahoe followed. It was very unusual to see that political and government organizations which in the „Old Continent“ would not normally be involved in research, became partners in selection of scientific projects, thus providing active support. From today’s perspective, this period could be seen as a time of great enthusiasm. American want to learn more about devastating diseases and have a natural optimism that a cure is possible. Although it may be difficult to see a clear connection, I also believe that the time of high investment in oncological science, including prostate cancer, was a consequence of a relaxed world economical and political situation. There was no sign of any kind of „crisis“ and the opportunities for new markets became greater. Economy growth could be compared with larger research groups in the United States, which impressed me a lot during earlier stages of the career. Now, I am becoming more conservative in my judgement of what is called „optimal laboratory size.“ That positive international environment was reflected at the Department of Urology of Innsbruck University in which close connections between the experimental and clinical scientists have been established. The Department enjoyed world class visitors such as Donald Coffey whose words of wisdom were always appreciated. In comparison to the present time, the transfer of
scientists from Europe to the U.S. was more frequent and people decided to move because of a relatively simple academic structure in the U.S. and earlier recognition of new research achievements which always impressed younger research faculty members. Thus, that first phase of my research was always like a search for new concepts. Because of frequent contacts with clinical urologists, I have been many times confronted with the question „what is the clinical consequence of your research?“ The answer to this question is at least in part a positive one: without androgen receptor research which became attractive before 20 years, after decades of use of inappropriate models, scientific community would not be so focused on development of abiraterone acetate or enzalutamide. Thus, there has been obviously a long way between elucidation of function of the androgen receptor in therapy resistant disease and development of novel therapies. We can show the patients that the investment in the research in the past is visible now. The communication between researchers and patients is not sufficiently developed in Europe. However, we hope that novel training possibilities for young researchers, as promoted by the European Union, will improve the situation in scientific communication.

My academic achievements were recognized by the University and I was promoted to the level of Associate Professor in 1999. From that time, a new period of my research has started, a period in which I have become much more involved in fund raising activities and recruiting fellow researchers. I have also broadened my research spectrum and, in addition to the androgen signaling pathway, included cytokine biology in several projects, some of which are ongoing. From these studies, I learned that the answer to clinical problems is not black and white. There are many lessons from the pre-clinical research for a proper design of clinical trials. It seems that some important pre-clinical recognitions are lost. The interactions between interleukin-6 and the androgen signaling pathway are still not clarified enough and it is particularly difficult to dissect the implications on early prostate carcinogenesis.

In this period, however, I learned that the peak in the society and public support of prostate cancer researchers has been achieved. Both Europe and U.S. have been affected and there is not a light at the end of the tunnel. Public organizations and agencies are faced with the problem how to distribute a reduced amount of money to a growing number of competent researchers. Several negative consequences of a bad economic development are obvious in laboratory research. It is important to have
a strategy which considers several sources of funding with exit variants. The system of grant distribution has reached the stage with many limitations and we all see that our time is more and more unreasonably spent. This problem does not only affect principal investigators but also grant reviewers and support staff. The question whether lengthy meetings and extensive travel of peer reviewers is still justified to select a very small number of projects (frequently below 10%) is a legitimate one. Our employers, Universities, will be inevitably confronted with the problem what they get as a result of the investment in human resources. I doubt that a large number of proposals which are not approved by external bodies may be a satisfactory answer. A more sustained funding of successful researchers does not appear to be established in academia. At the end, there is a reduced enthusiasm for scientific research and exchange of information. A typical symptom of increasing crisis in scientific management could be seen from my perspective as a Scientific Editor. Although the Internet helped us with efficient submission and evaluation systems, I understand a number of colleagues who are overcommitted and unable to read a manuscript as reviewers and provide critical assessment. Another problem which is increasingly recognized is an attempt to commercialize basic research. American Universities are perhaps more experienced in protecting their interests compared to their European counterparts. The different interests between the academic and pharmaceutical sector are obvious and there is a discrepancy between declared policies of grant agencies and real development. In particular, transnational projects frequently call for an active participation of a commercial entity. Many difficulties in such partnerships could not be neglected. I remember a potentially interesting workshop about the partnership, however, it is interesting to note that in Europe big grant calls are dependent on active industrial participation which raises questions about publication policy and intellectual property rights. From the practical point of view, such partnership expectations appear to bit a little bit naive.

I have had the opportunity to interact with several postdocs and Ph.D. students. Young people are of course different personalities and come with personal views and ideas in a research laboratory. Now it is a great pleasure to learn that some of them show a clear determination in research and social life. It is always a challenge to identify a right person after the interview. It is usually good to exchange opinions with junior lab members who will work with a new colleague. Social interactions are very
important for a general success in the laboratory and I learned that a proactive policy is appreciated by fellows and paid off. It is a pleasure to see how young members of the group are recognized with international awards, some of them after a relatively short time of research experience. It was always important for me to see science as a collective endeavor.

Let me mention two researchers from my laboratory. A considerable effort in supervision of Ph.D. students in my laboratory has been done by postdocs Frédéric Santer and Martin Puhr whose contributions are recognized in the urology research community. It became a difficult issue to me to provide a good advice to a postdoc. For a new Ph.D., there may be some more opportunities because mobility grants are still available. It is important to have a good overview what is going on. However, one should recognize that, in the rapidly changing prostate cancer research, there are some "trends" which may be simply a result of dominating technologies and advancements which have little in common with the focus of investigation. It is also understandable that many postdocs need more stability and that their knowledge is generated over many years of hard laboratory work.

A researcher should, if possible, consider performing services for the scientific community and this is what I have learned with the European Section for Urological Research ESUR. First, my intention when I became a Board Member in 2004 and now as a Chair was to attract the best brains in the urological community in Europe. These gatherings also are of special character and have marked our way from ESUR to successful European consortia such as PRIMA, CANCURE, and PRO-NEST. Some of these projects were initially discussed in hotel restaurants and other places where social meetings were organized. I hope that so far my colleagues in the Board and me have created an environment which is inviting to our meetings and which increases the European reputation in basic and translational urological research. I am also proud of establishing Dominique Chopin Award during my term on the Board. With that award, we honour true leaders in European urology research who had a vision how to discuss relevant topics by basic scientists and clinicians. So far, we have selected Jan Trapman, Norman Maitland, Natasha Kyprianou, Tapio Visakorpi, and Craig Robson as Chopin awardees. It is a great pleasure to see that the European Association of Urology is developing well. I still remember the days when I started to review for their journal European Urology which was not known to
leaders in the experimental field. Nowadays a publication of a scientific article in the journal is considered a premium.

Although a lot of work has been done, I see at present my obligations in promoting the most talented people in my laboratory and securing their professional stability and career. This may be a long way in the future.

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