



Prof. Zheng: whenever there is a challenge, there is always an opportunity

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Editor's note

The 4th Hong Kong International Oncology Symposium was held on 3–4 November 2017 at Hong Kong Adventist Hospital (Tsuen Wan) and City University of Hong Kong respectively. It is an academic symposium features different topics on oncology. The symposium gathered loads of international experts, who came together to unravel the present developmental status and advances of oncology. In the meantime, we were honored to conduct an interview with Prof. Lei Zheng, a renowned Associate Professor of Oncology and Surgery at Johns Hopkins University. In the interview, Prof. Zheng shared his views on the development of pancreatic cancer (*Figure 1*).

Expert's introduction

Lei Zheng (*Figure 2*), MD, an Associate Professor of Oncology and Surgery in the Gastrointestinal Oncology Program at the Johns Hopkins University School of Medicine. He is the Director of the Pancreatic Cancer Precision Medicine Program, a Pancreatic Cancer Center of Excellence Program at Johns Hopkins and Leader of Personalized Medicine Program at the Bloomberg-Kimmel Institute for Cancer Immunotherapy.

As one of the main researchers in oncology, Prof. Zheng is dedicated to develop a pancreatic cancer immunotherapy research program on a neo-adjuvant therapy platform. He is a lead researcher in the group of Johns Hopkins Cancer Center's physician scientists that have developed the pancreatic cancer GVAX vaccine, and is currently leading eight investigator-initiated clinical trials of inhibitor-based combination immunology. In his recent studies, his laboratory started to develop neoantigen-based vaccines and nanoparticle based adjuvant systems.

Since 2013, Prof. Zheng has published over 50 peer-reviewed papers and given more than 15 plenary and keynote speeches in national and international symposia.

Interview

We know that you are a specialist in pancreatic cancer.

What makes you interested in Gastrointestinal Oncology?

Prof. Zheng: I am interested in Gastrointestinal Oncology because I feel that there is a huge need from the patients. As you know, for many cancers in the last few years, we have made a significant breakthrough in the treatment. However, it's a still very challenging disease for pancreatic cancer. As a matter of fact, pancreatic cancer is anticipated to become the 2nd leading cause of the death among all cancers by 2030. Although pancreatic cancer is a not very common disease, I think we should put the most effort into this research of this disease.

We also recognized that the incidence of death regarding the pancreatic cancer is not decreasing, yet is increasing. Based on the statistics in the Europe, after 2014, the rate of mortality for most of the cancer types has decreased, except for the pancreatic cancer.

How did you develop the pancreatic cancer GVAX vaccine?

Prof. Zheng: The development is contributed to a group effort. When I joined School of Medicine of Johns Hopkins University, Dr. Elizabeth Jaffee and the pioneers at Johns Hopkins University School of Medicine have developed the GVAX vaccine. I contributed to the further development of the GVAX vaccine, particularly in the setting of combination immunotherapy. I designed the clinical trials, and conducted the translational research to analyze the specimen from the clinical trials. It helps to enhance the effect of the vaccine therapy and also developed combination immunotherapy that based on this cancer vaccine.

What are the difficulties in leading a research group?

Prof. Zheng: I think for certain is that leading a research



Figure 1 Interview with Prof. Lei Zheng: whenever there is a challenge, there is always an opportunity (1).

Available online: <http://asvidett.amegroups.com/article/view/14255>



Figure 2 Prof. Lei Zheng.

group has many challenges, but whenever there is a challenge, there is also a great opportunity. Otherwise, there would not be a need for the precision medicine program of pancreatic cancer research, that's when the challenge comes. As for the opportunities, we had a good foundation in different aspects of pancreatic research as well as the precision medicine research. All we have to do next is to follow the flow to further develop what we already have.

For example, the School of Medicine of Johns Hopkins University is historically considered the leading center in the world for performing pancreatic cancer surgeries. Such a reputation was gained after Dr. John Cameron,

a legendary surgeon, brought down the postoperative mortality rate of pancreatic cancer surgery from around 40 percent to 1–2 percent. The study of the very first whole genomic sequencing of pancreatic cancer was conducted by Bert Vogelstein's group in School of Medicine of Johns Hopkins University. Dr. Ralph Hruban's group delineated the genetic model of the multi-stage development of pancreatic cancer. Johns Hopkins University School of Medicine is currently leading the immunotherapy research for pancreatic cancer. Hence, we have a very good foundation in the researches of pancreatic research at Johns Hopkins University.

However, despite the opportunities we have, we encounter the challenges. The precision medicine program aimed at bringing all these precision medicine approaches together and moving them to the next level, which I reckon that's the challenging part. The reason behind is that we have not been able to integrate all our strengths together. In addition, we still have not really improved the outcomes for pancreatic cancers. As a matter of fact, the number of deaths each year for pancreatic cancer patients are still increasing.

In light of this, the challenge is how do we integrate all the strengths together? How do we build a big database? we should not only acquire the pancreatic clinical data, but we should also gather the pancreatic genomic data. Similarly, we should not only acquire genomic data, but we should also collect other biology data. For instance, the immunological data. If we can collect all these data together, then we can provide a good foundation for a better, new discovery of pancreatic cancer treatment. It depends on how we can make a breakthrough in treating and preventing the pancreatic cancer. Nevertheless, the challenge still lies on whether we are able to integrate all the information together in the first place.

What do you think of the development of pancreatic cancer treatment in the future?

Prof. Zheng: Yes, I remain positive about it. As a pancreatic cancer health-care provider, my thought is similar to many of my colleagues, whom are also taking care of pancreatic cancer patients, each of us has good experiences of obtaining good survival outcomes from a hundred of patients.

On the other hand, pancreatic cancer tends to have heterogeneous patients' groups and I believed that we need to individualized the patients here. We need to collect individual patient's clinical, genetic, and biological information. In addition, we should not consider

pancreatic cancer patients as one single group with a poor prognosis and survival outcomes. Instead, we need to think that there are many sub-groups of pancreatic cancer. Therefore, we need to identify those sub-types of pancreatic cancer patients, who have a good and unique biological profile.

Meanwhile, we also need to recognize the sub-type with those bad biological profile and poor outcomes from our patients too. By individualizing our patients and read from the given data during the research, we can learn from one group, one sub-type of patients and we can develop a better therapy for this group of patients. We may also use what we learn from this group of patients to apply to the treatment for other groups of patients. As we can identify the sub-types of pancreatic cancer, I think the advances in precision medicine will be the future for the pancreatic cancer.

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