

Prof. Anwen Liu: promoting knowledge in medicine and discipline construction, bring benefits to patients

Submitted Sep 23, 2017. Accepted for publication Sep 29, 2017.

doi: 10.21037/jtd.2017.09.147

View this article at: <http://dx.doi.org/10.21037/jtd.2017.09.147>

Introduction

The ancient Greek aphorism “*know thyself*” engraved on the forecourt of the Temple of Apollo epitomizes the human desire for the exploration into the unknown. In fact, never has mankind dragged their feet in understanding themselves, as in the achievements scientists have made all these years in the studies of disease and pathology.

Ere the 2017 WCLC journey, AME Editors were sent across China to conduct in-depth interviews with an army of distinguished experts in the field of lung cancer. Together we learned how these soldiers fought for the nation that has the largest number of patients, and how they dedicated their lives to inventing the most-advanced weapons and probing into the enemy camp. From the past, they reflect and learn from mistakes; At present, they work hard and make changes; For the future, they make plans and improvements.

May this issue take you to the innermost world of these Chinese scholars, where you can delve into their wealth of knowledge and be inspired.

Editor's introduction

Anwen Liu, Female, graduated from Jiangxi Medical Colleague (Now Medical College of Nanchang University) with a bachelor's degree in clinical medicine in 1989, she obtained her master's degree in medicine in June in 2005, and Ph.D. in 2009. Prof. Liu is a chief physician and the director of Department of Oncology, The Second Affiliated Hospital of Nanchang University, director of Jiangxi Province Key Laboratory of Clinical and Translational Oncology. Prof. Liu has been working in the field of comprehensive treatment for tumors and clinical research for more than 20 years, she has solid theoretical knowledge and practical experience. She was a visiting scholar and studied at MD Anderson Cancer Centre in the U.S. from January to September in 2013. Prof. Liu is the chairman of Oncology Branch of Jiangxi Province Research Hospital Association, co-chair of 5th Oncology

Committee of Jiangxi Medical Association, vice chairman of professional committee of Radiotherapy of Jiangxi Province Anti-Cancer Association, member of 3rd professional committee of Neural Tumors of Chinese Anti-Cancer Association (CACA), member of Radiotherapy Group of professional committee of Lung Cancer of CACA, member of standing committee of professional committee of Tumors Radiotherapy of Wu Jieping Medical Foundation and national professional committee of Gastrointestinal Tumors, executive member of Thoracic Cancer Branch of China International Exchange and Promotion Association for Medical and Healthcare, member of Chinese Society for Oncological Nutrition & Integrative Medicine. Prof. Liu was selected into 2016 Jiangxi Province Hundred, Thousand and Ten Thousand Talent Project.

AME: Why did you choose to be a doctor?

Prof. Liu: It was my father's suggestion. For as long as I can remember, my mother was always in poor health. When I was in high school, my father told me that I should study medicine. My father was a local official and he thought it important for each child in our family to master an expertise. He believes that one can feed himself well as long as he has a certain set of skills. He suggested for me to study medicine, and my elder sister accounting, my younger sister teaching, so as to ensure everyone has some skills. I am a quiet person by nature, and I slowly felt that being a doctor was the right occupation for me.

AME: It sounds that your father has great influence on you?

Prof. Liu: Yes, he does. I have always felt that my father chose the right occupation for me. I have always, from a young age, had great respect and admiration for my father. He would be so proud of me whenever I made small achievements, which also made me very happy. I still remember when I received my first master's degree, he

happily looked at the certificate. I got my PhD degree half a month before he passed away, he was in his eighties back then. When he saw my certificate, he was very happy and looked at it for a long time. I often think that I haven't let him down after all. I still miss him a lot, and even today, whenever I achieve a little success, I will tell him about the good news in my heart." Prof. Anwen Liu had been outspoken throughout the interview, but talking about her father brought tears to her eyes.

Prof. Liu admitted that her family's support helps her explore in the medical field. Her parents, her parents-in-law and her husband give her their full support, which enables her to dedicate herself to her medical career without worries and concerns about taking care of her family. And that's the reason why Prof. Liu can manage her further education and research in prestigious leading medical centers both at home and abroad over the past decade. She is continuously improving her professional skills in order to help patients and relieve their pain.

I love, therefore I am

I have heard from her colleagues that Prof. Liu arrives at work at 7 am and leaves at 7 pm every day. It is not an easy feat for many people. I asked Prof. Liu how she manages to keep to this schedule.

"I think it is because of my passion for the job. My passion keeps me energized every day. I feel very happy when I meet my ex-patients, because even though it's been so many years, they still recognize me, and smile and greet me when they see me." When talking about this, she beamed brightly, and I could tell that her smile was that of genuine contentment, a smile that displayed her devotion for her work. I began to understand the reason why Prof. Liu always maintained a smile on her face when treating her patients.

Prof. Liu developed a habit of reading articles before bed. She explained that she would feel empty if she skipped reading time, and would find it difficult to fall asleep. Reading articles and keeping herself updated with recent academic advancements is a real spiritual enjoyment for her. It is because of her dedication and expertise, Prof. Anwen Liu was promoted as director of the Department of Oncology of The Second Affiliated Hospital of Nanchang University in 2010.

Diligence and persistence make expertise

Even since Prof. Liu began to work as director of the

Department of Oncology of The Second Affiliated Hospital of Nanchang University, she has not only set higher professional standards for herself, but has also constantly been thinking about and exploring the strategies that can bring the whole department to a new level. Being an oncologist in a 3A (Grade 3 first class) general hospital, it is crucial to obtain new knowledge to better help patients. In this era of knowledge explosion, the rapid progress of medicine is reinforced by enormous improvements, doctors must keep their knowledge and skills up to date, while we can't all be experts in every field, we can endeavor to be brilliant in one.

Prof. Liu proposed a plan of sub-discipline division, after careful consideration and thoughtful discussion, in late 2013, this plan had been implemented in the Department of Oncology of The Second Affiliated Hospital of Nanchang University, which set a precedent for other general hospitals in Jiangxi Province. It has laid a solid foundation for the further development of the discipline.

It is obvious that the sub-discipline division does not necessarily guarantee an improvement in medical care. Therefore, the department, also promotes research-centered practice. Lectures have been introduced as a weekly routine, and all the doctors are requested to make full use of this platform to share recent knowledge in the medical field. So far, the Department of Oncology has been awarded more than 10 national projects, published more than 30 SCI journal articles. Before Prof. Liu became in charge of the department, there was no previous achievement in these two research areas. In 2017, the Department of Oncology of The Second Affiliated Hospital of Nanchang University was approved to be "Jiangxi Province Key Laboratory of Clinical Cancer Research", which was another important breakthrough in the history of the department.

In 2013, Prof. Liu finished her study at MD Anderson Cancer Center in the United States and returned to China. She was keen on taking the initiative to put new technologies into practice. With the support of the hospital officials, she introduced the most advanced equipment. At the same time, Prof. Liu also followed the cutting-edge concept of cancer treatments, she took the lead in carrying out a variety of treatments including 4D-CBCT-guided stereotactic ablation radiotherapy, volumetric modulated arc radiotherapy (VMAT), CT-guided intracavitary radiotherapy combined with external irradiation for gynecologic tumor. These advanced techniques have greatly improved the efficacy of treating tumors, which places Jiangxi Province in the leading position of implementing

cancer treatments.

In recent years, molecular targeted therapy has increasingly received great attention.

Prof. Liu encourages and supports her colleagues continuously, as of April in 2014, the team successfully carried out targeted gene therapy for non-small cell lung cancer (NSCLC) based on molecular detection technology. Through the platform of Jiangxi Province Key Laboratory of Clinical Cancer Research—Molecular Centre of The Second Affiliated Hospital of Nanchang University, the department has made great achievements and is now highly prominent in Jiangxi Province. Prof. Liu is well aware that besides introducing advanced knowledge and technology, it is also necessary to provide opportunities for doctors to acquire useful skills from different resources. The department has represented Jiangxi Province and participated in the nation's MDT (multidisciplinary team) communication meetings and competitions many times and also received accolades; it has also successfully hosted seminars and workshops in the field and gained positive feedback from peers.

As director of the department, Prof. Liu manages to motivate doctors' enthusiasm in order to tap into the potential of both the individuals and the team. With Prof. Liu and the team's joined efforts, the Department of Oncology has taken the lead in cancer treatment in Jiangxi Province and brought more hopes and opportunities for patients.

Precision, sincerity and cooperation

Prof. Liu has been engaged in the comprehensive treatment of cancer and clinical research for more than twenty years with solid theoretical and practical experience. Speaking about the comprehensive treatment of lung cancer, Prof. Liu said, *“the comprehensive treatment for lung cancer is based on patients' condition, including physical and mental condition, the specific position of tumors, pathological types, tumor cell invasion areas and the indication of increase. In order to improve the quality of the life of patients, we can use existing comprehensive treatments and combine with molecular changes effectively, also we try to minimize the cost and maximize efficacy of treatment.”*

In terms of efficacy, the primary methods for treating lung cancer include surgery, radiotherapy and chemotherapy, also biological therapy and traditional Chinese medicine are also considered complementary methods.

The concept of modern comprehensive treatment based

on study of tumors, such as biological symptoms of lung cancer, emphasizes on the appropriate combination of all methods of treatment with a good understanding of the advantages and disadvantages of various treatments. Prof. Liu particularly mentioned the local treatment for advanced lung cancer that sparked heated discussions recently. She believes that if the systemic disease is well under control, the local treatment will achieve a better result. This promises a new breakthrough in the comprehensive treatment for cancer, particularly for lung cancer in the future. Prof. Liu shared her excitement about the new concept, *“With a profound understanding of biology, we propose this comprehensive treatment concept, which is totally different from the previous ones.”* She further explained that this improvement mainly depends on the progress of various disciplines. It is indeed a significant progress that apart from chemotherapy drugs, we now also have targeted drugs, the efficacy of treatment is dramatically improved by using the various methods. On the other hand, as radiotherapy is more precise than ever before, it helps reduce radiation damage to normal tissues.

Prof. Liu expressed her opinion about the future development of comprehensive treatment of lung cancer: *“It is the emergence of these new technologies that enables local treatment to play a big role in cancer treatment. The comprehensive treatment of lung cancer has developed to a new stage, which is not only inseparable from the knowledge of tumor biology, but is also connected to many elaborate methods. Multi-disciplinary cooperation will be vital in the treatment of lung cancer.”*

Stereotactic radiotherapy (SBRT) vs. surgery, complementing each other with strength

In 2015, Prof. Joe Chang at MD Anderson Cancer Center pointed out that the SBRT for treating early stage NSCLC would make no big difference when compared to surgery, which led to a heated discussion at home and abroad. When asked about her views on this topic, Prof. Liu said that SBRT for treating early stage NSCLC raised two main concerns: firstly, for patients who cannot tolerate or do not want to have a surgery, SBRT can replace the traditional external irradiation as a standard treatment and significantly improve local control rate and survival rate, which has been the consensus; secondly, it is still controversial whether SBRT can be an option or a better option in treating patients with early stage NSCLC who can be also treated with surgical methods; the decision-making involves interpretation of the situation from surgical and

radiotherapy experts. When compared to surgery, SBRT has advantages such as equivalent and even higher local control rate, fewer side effects, noninvasive wounds or smaller wounds, and lower requirements of the general condition of patients, but it also has disadvantages, such as lower long-term survival rate, the lack of pathological diagnosis, failure of systematic lymph node dissection and treatment, lower staging accuracy and the lack of accurate evaluation of the treatment efficacy.

“We still need randomized clinical trials to compare SBRT and surgery in terms of efficacy in treating patients with early stage NSCLC. Unfortunately, it is extremely difficult to make a further progress of RTOG1021, STARS, POSTILV and other group randomized study.” Prof. Liu looked a bit disappointed and said: *“for example, VALOR in the U.S. and SABR Tooth in the UK, we are appealing to thoracic surgeons to support and participate in the research, on the other hand we also need to address that SBRT is not a replacement for surgery, but rather a complement which coexists with surgery.”* In recent years, the lower-risk video-assisted thoracoscopic surgery (VATS) has spread rapidly, which further consolidates the position of surgery in the treatment of early stage NSCLC. Prof. Liu emphasized that we should focus on the research of the advantages and disadvantages of the two methods and make both treatments complement each other with their strength. In order to improve the efficacy of individualized treatment of early stage NSCLC, we need to identify two groups of patients accurately and provide appropriate treatments.

Build up “internal strength” through norms and training

As director of the Department of Oncology of The Second Affiliated Hospital of Nanchang University, Prof. Liu believes that it requires qualities in all aspects to be a good oncologist, among which solid basic knowledge and good communication skills are essential, and these qualities are prerequisites to becoming an oncologist and must be trained as “internal strength”. Prof. Liu said that oncology covers a wide range of knowledge, such knowledge updates itself rapidly, and it is demanding to be an experienced expert in a particular field. Senior oncologists may usually focus on a certain disease so as to further improve their diagnosis and treatment capacity. But for young oncologists, they will have enough time and opportunities to be involved in other departments, which helps them to have a broad and solid basic knowledge. In some general hospitals, due to some conditions, graduates are assigned to a specific

department of the hospital after graduation, and Prof. Liu thinks this routine is not ideal. We can learn from other matured modes of training specialists, for example, in some Western countries, medical students need to have 2 to 3 years of basic training in math, physics and chemistry before they start to learn the fundamentals of the medicine science as undergraduates. After graduation, they are required to receive a higher level of specialized training in the field of cancer, in other words, medical students with Bachelor’s degrees from university cannot be oncologists immediately after graduation.

We were also pleased to learn that many domestic universities and hospitals have begun to explore the education system, and started to draw on the valuable experience from abroad. *“In our hospital, we require young doctors to rotate in all clinical and medical departments including Internal Medicine, General Surgery, Pediatrics, Gynecology, Pathology, and Radiology, as well as the sub-discipline divisions of Internal Medicine for about 1 to 2 years.”* Prof. Liu told us proudly, *“Apart from chemotherapy, radiotherapy and other basic knowledge, oncologists are also supposed to have a variety of relevant internal medical expertise, such as routine treatment of diabetes and septic shock. The benefits of this kind of training will be reflected in the future when they treat cancer patients. Once the young doctors have a broader view and obtained multiple skills they can be more professional and provide better treatments for patients!”*

Furthermore, oncologists must also adhere to the principles of standardized treatment, and take a highly personalized treatment plan combined with patients’ own clinical characteristics. Prof. Liu explained that generally most patients can be treated in accordance with the principles of the treatment guidelines, but some patients should be given specific treatments considering their respective clinical symptoms and the oncologists’ professional diagnosis. For instance, the National Comprehensive Cancer Network (NCCN) guideline is not the highest standard of treatment for tumors, but rather a minimum requirement. We should interpret all kinds of guidelines correctly in the process of improving the treatment.

In some countries, surgeons are required to have a period of training in order to obtain a certificate before they are allowed to implement chemotherapy treatment to patients. Prof. Liu suggested that we should also establish a screening system for oncologists in our country, and gradually apply strict entry requirements so as to ensure the interests of patients.

Where there is a will, there is a way

The doctor-patient relationship in China has been deteriorating, when Prof. Liu was asked if she wishes her child to learn medicine, she answered: “*I encouraged him, I hope he can take after my profession, but medicine is not his passion.*” Prof. Liu believes that “*where there is will, there is a way.*” Even though the current situation is not satisfactory, as a medical practitioner, if we can show patients our kindness, sympathy, most of them will show respect to you in return, it is not that terrible. Patients seek treatment to relieve suffering, heal diseases, something that is also our lifelong goal.

“*To cure sometimes, to relieve often, to comfort always,*” as this famous quote explains, we note that psychological treatments and technologies are all very important. This is especially so when oncologists meet many patients with middle or advanced stage cancer, and there is no hope in treatment, at that moment, what patients need may only be a small promise in order to feel better, for example: “*You can definitely attend your son’s wedding next month!*” or “*Don’t worry. You will see your newborn grandchild!*” When talking about this, I saw sadness in her eyes, but at the same time, they were filled with determination, an expression that displayed both her sorrow for the departed patients and her eagerness to conquer these diseases. Prof. Liu wants

to try her best to help those patients who still have “trivial concerns” about their lives; she wants to help them even if they can only live one more day.

When my colleague and I were near the end of the interview, Prof. Liu opened the door, and more than 10 patients rushed in her office of less than 10 square meters. We could hear patients asking eagerly, “*Dr. Liu, is my condition curable?*”, “*Dr. Liu, this is my mum’s scan results, please tell us what the next step is?*” The respect from patients and their families is the biggest pleasure for Prof. Liu. Doctors influence patients in a way where “if the doctor says that a disease is curable, I’ll believe it”.

Acknowledgements

We would like to acknowledge Weiyan Jiang for her great help in editing this article. All graphs provided by Prof. Anwen Liu.

Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

(Editors: Molly Wang, Lynn Ma, AME Publishing Company, jtd@amepc.org)

Cite this article as: Wang M, Ma L. Prof. Anwen Liu: promoting knowledge in medicine and discipline construction, bring benefits to patients. *J Thorac Dis* 2017;9(Suppl 11):S1190-S1194. doi: 10.21037/jtd.2017.09.147