

The history of development of rheumatology in China: From a single center to the whole country

Xiaofeng Zeng*

Department of Rheumatology and Clinical Immunology, Peking Union Medical College Hospital, Peking Union Medical College and Chinese Academy of Medical Sciences, National Clinical Research Center for Dermatologic and Immunologic Diseases (NCRC-DID), Beijing, China

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Year 2020 is the 40th anniversary of the establishment of Department of Rheumatology of Peking Union Medical College Hospital (PUMCH). This year is also the 100th birthyear of Professor Naizheng Zhang, the founder of Chinese rheumatology. At this special time, I would like to take the growth of Department of Rheumatology of PUMCH as an example to briefly review the history of development of Chinese rheumatology. The history of the department is also a demonstration of how a single center, the Department of Rheumatology of PUMCH, contributed to the development of rheumatology of the whole country.

Rheumatology is an ancient yet young division of medicine. Although it has become a subspecialty for only about 70 years, rheumatic diseases can be found in Western Medical sage Hippocrates's works that dated back to 1000 B.C. Rheumatic diseases were also recorded in the Chinese Traditional Classical works of Han Dynasty before 200 B.C. Therefore, the word "Rheumatism" was translated as "Fengshi Diseases" in Chinese Traditional Classical works. However, it is not until 1948 when Hargraves discovered lupus cells and autoimmunity's role in the pathogenesis of rheumatic diseases that Rheumatology became a new subspecialty in modern medicine.

Rheumatology in China was established much later than in Western countries. There was no modern rheumatology in China until 1959 when Professor Naizheng Zhang, a senior

lecturer of Department of Internal Medicine of PUMCH at that time, was sent to Moscow, Soviet Union, to learn rheumatology. Professor Zhang received training in rheumatology for 1 year at the Institute of Rheumatology, Academy of Medical Sciences of former Soviet Union. After returning to China in 1960, Zhang set up the rheumatic disease clinic in PUMCH and participated in compiling the rheumatology part of the National Plan for the Development of Science. He started several laboratory tests in rheumatology, targeting rheumatoid factor and anti-hyaluronic acid antibody. All these were regarded as the starting point of Chinese rheumatology. However, the progress of Chinese rheumatology had to stop because of the national economic difficulty and the Cultural Revolution. In 1976, after fulfilling the medical support obligation in Viet Nam, Zhang started to re-build the department with the help of Professor Yi Dong. In 1979, with the support of Professor Xiaoqian Zhang, the Director of Department of Internal Medicine of PUMCH, the rheumatology study group was set-up. Based on this study group, Department of Rheumatology of PUMCH was officially established in 1980. This was the first department of rheumatology in China. Zhang was the first director of the department. At that time, the department only had 6 faculties, including Drs. Yi Dong, Xuelian Tao, Ai Jin, Xiaoying Ke, Peizhen Chen, and Qinfang Song. This symbolized the starting of a new era of Chinese rheumatology. In 1979, Zhang started to recruit candidates for master's degree in rheumatology around the whole country. This initiated the

Address for correspondence:

*Xiaofeng Zeng, Department of Rheumatology, Peking Union Medical College Hospital, Peking Union Medical College, Chinese Academy of Medical Sciences, National Clinical Research Center for Dermatologic and Immunologic Diseases, Beijing 100730, China. E-mail: zengxfpumc@163.com

“cultivating talents plan in rheumatology” in China. The first candidates were Fulin Tang, Mengxue Yu, and Qingyu Zeng. They later became the leaders of Chinese rheumatology. Drs. Fulin Tang and Mengxue Yu joined the Department of Rheumatology of PUMCH after graduation. Professor Ming Jiang joined the department after she completed her training in rheumatology in the United States in 1982. At that time, the Department of Rheumatology of PUMCH had about 10 faculties, a promising number and a sound foundation for a strong medical department. In 1983, the department successfully got the loan for education from World Bank and was approved to set up the national training center for rheumatology. Since 1978, the department has trained about 100 rheumatologists with Doctor’s degree and 10 post-doctors. Up to 2019, more than 1500 rheumatologists around the whole country had come to PUMCH and received training in the department. The department also organized short training courses on rheumatology every year and organized several nation-wide meetings to update the knowledge of rheumatology for rheumatologists around the country. In this way, the department trained generations of rheumatologists for China. This is the biggest contribution of the department to the development of Chinese rheumatology.

Furthermore, Dr. Zhang led the first epidemiology study on rheumatic diseases in the country and published the first paper in *“The Journal of Rheumatology”* titled “Rheumatic diseases in China” in 1983. Meanwhile, he also actively participated in the international collaborative epidemiological studies of common rheumatic diseases, such as rheumatoid arthritis, ankylosing spondylitis, systemic lupus erythematosus, and Sjogren’s syndrome. Zhang’s active participation in these studies gave him preliminarily understandings in the epidemiological characteristics of rheumatic diseases in China. It also corrected the long-standing misconception that rheumatic diseases were rare in China and Sjogren’s syndrome was very rare in China. Based on his studies, the Chinese medical textbooks were re-written. Under his leadership, the department became the first in the country to set up the testing methodology for anti-Sm antibody, anti-SSA antibody, anti-SSB antibody, anti-RNP antibody, and anti-Scl-70 antibody. He then applied these methodologies to clinical practice and made them available in the whole country. The availability of these tests has remarkably facilitated the development of Chinese rheumatology. Many misdiagnosed cases were corrected and the diagnostic rate was significantly improved. He was awarded “National Prize for Progress in Science and Technology” in 1988 for his work in autoantibodies. In 1985, Dr. Zhang established the Chinese Rheumatology Association, a branch of Chinese Medical Association. He was the first and second president of the association. With his great contributions, Dr. Zhang was called the “Father of Chinese Rheumatology” by his international and domestic colleagues.

Under the leadership of Drs. Naizheng Zhang, Yi Dong, Ming Jiang, Fulin Tang, and Mengxue Yu, the department developed steadily with the motto “growing persistently by emphasizing on clinical practice, developing continuously by strengthening teaching, catching up with the bests of the world by doing high quality research, and progressing with high speed by building-up solid infrastructures and making full use of resources available”. We not only paid attention to discipline development, but also emphasized on academic innovation. With 4 decades of hard work and efforts, the department has become one of the best departments of PUMCH; from the youngest and least-known in the hospital, the department has become the best in Chinese rheumatology. In the past 10 years, the department has received funding from “the National 11th 5-year Plan Program”, “the National 12th 5-year Plan Program”, “the National 13th 5-year Plan Program”, “863 National Program”, and “973 National Program”. In addition, we developed national multi-center research network, called Chinese SLE Treatment And Research Group (CSTAR), and established the nation-wide registry database in 2009. In 2011, the registry database was upgraded to China Rheumatism Data Center (CRDC). From then on, it has become the specific database for rheumatic diseases in China. Now, clinical data of approximately 1,800,000 patients with rheumatic diseases are stored in the CRDC. This database has provided the demographic information and clinical characteristics of Chinese patients with rheumatic diseases and has provided the basis for making national policy.

Since the establishment of Chinese Rheumatology Association, we have already had 11 presidencies. All presidents are from the department, except for the 8th. In addition, Dr. Yi Dong had the honor to be the vice president of Asia Pacific League Against Rheumatism (APLAR). Dr. Xiaofeng Zeng is the vice president of APLAR now.

The history of the development of the Department of Rheumatology of PUMCH is a representative of the history of development of Chinese rheumatology. When the Chinese Rheumatology Association was funded in 1985, there were less than 50 rheumatologists in the whole country. We did a series of national surveys in years 2007, 2012, 2015, 2018, and 2019. In these years, the number of physicians practicing rheumatology were 2216, 4515, 7197, 12189, and 12728, respectively. From the changes of these numbers, we can see the rapid development of Chinese rheumatology in the recent 8 years.

Department of Rheumatology of PUMCH has been ranked No. 1 for 10 consecutive years in the Fudan discipline ranking list. Fudan discipline ranking list is a nation-wide ranking system based on peer surveys, which was established 10 years ago. The department is now the key discipline of the “State education Commission”, the first doctoral degree conferring center for rheumatology in the country, the first center for post-doctoral studies of China, the training bases for residents of

the Health and Family Planning Commission, State continuous medical education base on rheumatology, State clinical pharmacology base of rheumatology, the only research platform for drug evaluation of autoimmune diseases of the country, and the key Laboratory of Ministry of Education. In 2019, the department was nominated “National clinical research center for dermatologic and rheumatic diseases”.

The hard working and perseverance as well as the spirit of forgoing ahead in unity for the past generation of the

department is the epitome of the persistent hardworking of the Chinese medical professionals, who have served Chinese patients with heart and soul for the past half century. Therefore, we can say that the development of the Department of Rheumatology of PUMCH and the development of Chinese rheumatology is also the epitome of China, a country that found its way to prosperity despite all the challenges it faced. Medicine progresses along the development of the country is the key to the improvement of medicine.