

Professor Qing Jiang: the development and the future of curing osteoarthritis

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Editor's note

At the 2017 biennial meeting of International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine (ISAKOS) in Shanghai, we were honored to invite Prof. Qing Jiang (*Figure 1*), who serves at the Department of Osteoarthritis of the Nanjing Drum Tower Hospital affiliated to Medical School of Nanjing University, to have an interview with us on the development and the future of curing osteoarthritis as well as the prospects of *Annals of Joint (AOJ)*.

Expert's introduction

Jiang Qing is the Director and Professor of the center of Diagnosis and Treatment for Joint Disease, Drum Tower Hospital Affiliated to Medical School of Nanjing University. He is also a Postdoctoral Master and a Postgraduate Mentor. He serves as a member of the Society of Orthopedic Trauma Group, Chinese Orthopedic Society of Chinese Medical Association and the Arthroscopic Surgery Group, Orthopedic Branch of of Chinese Medical Association. He is the Chief Commissioner of the Society of Sports Medicine in Jiangsu Province. Prof. Jiang is skilled at arthroscopic techniques including curing total knee replacement with high level of difficulty, total hip replacement, knee osteoarthritis and osteonecrosis of the femoral head. For now, the number of knee surgeries in the hospital ranked the top among other hospitals in Jiangsu Province every year. He won the Provincial Award for Scientific and Technological Progress, four prizes of New Introductory Technologies Award by the Provincial Health Department and two prizes of Scientific and Technological Progress Award by the Municipal Department. For the current research subjects, there are 2 items on state-level of research projects and 6 items on provincial and municipal-level of scientific research projects. At present, he focuses

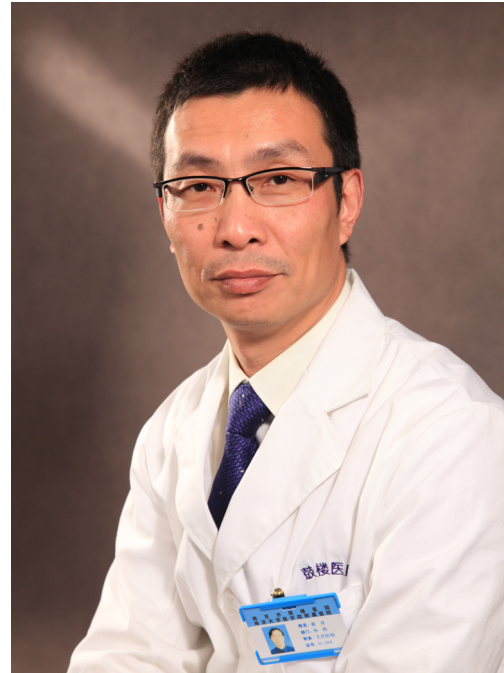


Figure 1 Professor Qing Jiang.

on the artificial knee joint repairing technology, basic and clinical research on knee cartilage repair techniques and so on. He is also one of the Editors-in-Chief of *Annals of Joint (AOJ)*.

The current status and standardization of curing osteoarthritis in China

AOJ: *There are more than 80% of the population that has varying degrees of osteoarthritis over the age of 60, could you tell us about the current situation of the treatment in China?*

Prof. Jiang: There are more people suffering from osteoarthritis in China, most of them are elderly people.

Some of the patients are fond of sports or with metabolic syndromes. As we can see a trend of rejuvenation of patients who suffered from osteoarthritis, the number of patients are constantly increasing. This serious situation in China is similar to the situation in the Western countries.

For this current phenomenon, the treatment of osteoarthritis is not very standard. Hospitals in big cities in China are operating relatively more standard than those in smaller cities in terms of the treatment of osteoarthritis. Implying that the smaller the scale of the cities or hospitals is, the more non-standard treatment of osteoarthritis could be found. This phenomenon can be reflected in the following ways: one is paying excessive focus on drug therapies that disregarded non-drug treatment such as adjuvant therapy, the other one is paying too much attention on surgical treatments and neglecting measurements on some of the non-surgical treatments.

AOJ: *Could you introduce us on the standardized treatment of osteoarthritis?*

Prof. Jiang: The treatment of osteoarthritis should be analyzed in a staged approach. First of all, I think when the patient is diagnosed as osteoarthritis, the doctor should assist the patient with implanting him a change of concept on maintaining a healthy lifestyle. For example, you can advise him to maintain proper eating and living habits to keep him from being fat. Moreover, you can also advise him to avoid inappropriate exercising or having unhealthy living habits such as going hiking with high frequency or insisting on participating in a marathon when already being found with an obvious symptoms of osteoarthritis. Otherwise, the disease might have worsened over time.

On the other hand, for the patient's medication on early stage treatment of osteoarthritis, painkillers are the only analgesic medicine on the cure based on evidence-based medicine. However, the painkillers can be used in a staged approach and we will see its effectiveness. For instance, when the patients are found with mild symptoms, it is suggested that he can use local drugs for external use as it has less side-effects. When the local drug for external use is not useful anymore, then he is suggested to have the orally administered painkillers. For orally administered painkillers, it has a lot of choices such as Cox-2 and non-selective inhibitors. The inhibitors have more side-effects

on gastrointestinal tract. For selective inhibitors, it has less side-effects on gastrointestinal tract. If the patient's condition is severe in the late stage of the disease and it is uncontrollable by the painkillers, then the treatment of performing surgical operation is an alternative. This is what I mean analyzing the treatment of osteoarthritis in a "staged approach".

Nowadays, for osteoarthritis, the means of treatment remain controversial. Many doctors provided local injection as daily clinical practices including injections of hyaluronan and glucosamine which is orally administered for patients. For all these drug treatments, they are proved by foreign studies and evidence-based medicine to be ineffective. In China, however, we are still using them as a means of medical treatment. Because it doesn't mean that those drugs are completely useless. When the doctors decided to prescribe those drugs to the patients, they should tell them the effects clearly. Any means of medical treatment should be based on the combination of the basis of medical treatment, the patient's willingness and the doctor's clinical experiences. Therefore, it is essential for the doctors to explain clearly to the patients on the effects of the drugs before they prescribed them to the patients.

AOJ: *What is the role of minimally invasive surgery in the treatment of osteoarthritis?*

Prof. Jiang: At present, foreign studies of evidence-based medicine pointed out that minimally invasive surgery for the treatment of osteoarthritis is useless. In fact, given that it is not selective, the idea that the doctors perform minimally invasive surgery on all patients with osteoarthritis is definitely inappropriate. Therefore, we might ask a question on which type of patients is suitable for this clinical operation? Indeed, it is suitable for patients who suffered from osteoarthritis and accompanied by the symptoms of meniscal injuries or loose body to receive minimally invasive surgery as a means of cure. Therefore, it is unnecessary to say that all the surgeries could not be done effectively. In fact, many doctors in the Mainland China are very experienced in performing this surgery. This idea might be different from the American's concept of viewing how the surgery could be done. However, I think all we need is to collect our own research data regarding this subject and our own perspectives of evidence-based medicine to further validate the

indications of minimally invasive surgery on the treatment of osteoarthritis.

The future development on the treatment of osteoarthritis

AOJ: You have been engaged in the genetic research of orthopedic systematic disease, can you talk about the relationship between osteoarthritis and inheritance?

Prof. Jiang: For inheritance, we can first establish a basic concept. Generally, for genetic disease, it is called as multi-gene disease. It is different from mono-genedisease. Mono-genedisease is one single gene that affects all the body systems. For polygenic disease, it refers to polygenes affecting on a certain disease. However, polygenic disease is characterized not only by genetic factors (genes), but also is distinguished by environmental factors. Osteoarthritis is a typical polygenic disease. Polygenic disease is affected by genetic factors and environmental factors. The so-called “environmental factors” is the impact of non-genetic factors, such as a person’s daily exercises, a slight wound or ways of exercising, even other ways will also trigger this effect and this is called as “polygenic disease”.

In fact, most of the diseases including high blood pressure, diabetes and so on are categorized as polygenic disease in clinical practices. Using osteoarthritis as an example, if your parents are diagnosed with osteoarthritis, then their children will have a higher chance of getting osteoarthritis too. Yet, it doesn’t mean that their children will also catch the disease too; If your parents do not have this disease, then as their children, it is unnecessary to say that their children would never be suffered from osteoarthritis. Therefore, if your parents are unfortunate to be diagnosed with osteoarthritis, then as their children, you inherited the genetic background a lot more than that of the others, implying that you are strongly advised to pay more attention on the daily practices to prevent the disease. On the contrary, if your parent’s genes are very good, yet you are not paying enough attention on the daily practices such as being overweight or playing inappropriate exercises all day long, then it is more likely to get the disease.

AOJ: How do you view on the future development on the treatment of osteoarthritis?

Prof. Jiang: I personally think that for the drug therapy,

it should be developed to a point where the drugs are able to improve the treatment. I have hopes in this regard. On the other hand, for the biological treatment, I think it is promising in the future. For example, we can look at the study of the cartilage regeneration that stimulated through the stem cells. I believe that this study has a positive prospect in the coming future.

The vision to the future orthopedic surgeons

AOJ: As one of the Editors-in-Chief of the Annals of Joint (AOJ) magazine, what are your ideas and development goals on AOJ?

Prof. Jiang: For this magazine, my idea is to position it as a journal that is ranked the top in this medical field. I would like to focus on basic scientific researches and clinical studies so that the content of the journal can be advanced to the next level. It is just like back to the time when we launched this journal and defined it as a cross-cutting journal. It consists of different components including basic scientific researches, clinical studies, genetic disciplines, materials and other aspects. I hope that our journal is able to be recognized as a first-rate journal within our own medical filed.

AME Publisher: Would you like to give some advices to young orthopedic surgeons?

Prof. Jiang: Under the influence of overall economic and technological levels on China’s rapid improvement, I think the current period is the best time for young orthopedic surgeons to give full pay to their abilities, as well as the worst time for them to exercise their talents. Due to too many opportunities for them on clinical practices, one is counted on the advanced medical service level in which many doctors are able to master more updated surgical techniques. Another one is counted on rapid economic development as the patients could afford using more new medical equipments, more advanced and expensive drug therapies in order to achieve better treatment effects. This impacts deeply on orthopedic surgeons as they are given alternatives on means of treatment. However, it is also the worst time for them to exercise their talents. It is because I am worried that the young orthopedic surgeons are ignorant that they only focus on performing surgical operation and neglect the nurturing of comprehensive clinical knowledge as well as

other aspects of scientific research. That's what I said as being the "worst period of time" for the young doctors to exercise their talents.

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