Hanyang University Hospital for Rheumatic Diseases – Bae Sang-Cheol, Director – South Korea



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The director of the Hanyang University Hospital for Rheumatic Diseases (HUHRD), discusses Korea's leading role in developing biosimilars as well as the hospital's efforts to curb chronic diseases.

As a leading expert in rheumatism, what have been some of the main developments in this particular area of study?

Rheumatologic diseases are mostly immune disorders and can be very chronic. There was a time when people thought these diseases would be soon cured, faster than cancer, but it seems that it is not so easy. However in the past decade, there has been a significant paradigm shift with development of biologic agents through a better understanding of the mechanism of the diseases. These drugs are very effective, but also very expensive. Although Korea was not the leading country in development of the biologics, it is the leading country for development of biosimilars, or copies of biologic agents.

Development of biosimilars for the treatment of patients with rheumatic diseases could potentially result in substantial cost savings for patients and health care providers, and consequently, increased availability of effective therapies. Biosimilars are not generics. Generics are chemical compounds with simpler chemical structures and are considered to be identical to their reference

drug. Biological agents are complex molecules sensitive to the manufacturing process and it is almost impossible to make the exact replica without the details of the original manufacturing process.

A number of companies, Celltrion, Samsung, LG to name a few, are currently active in developing biosimilars. It is now the “Warring States Period” for the biosimilars market with many of the top ten biologic agents in the world being produced in Korea. With successful developments of biosimilars from different companies, there will be steep competition in the market.

What has been the most important achievement during your career so far?

After returning from the US in 1998, my main interests were on drug pricing and policy. I’m one of the rare breed of physicians who have studied economics and an expert in cost effectiveness analysis. Although I was successful in performing high quality and high impact research in the field, I felt that this was not sufficient. After 2005, I played a leading role in development of Korean R&D. I shaped the policies for R&D development in Korea to become innovative, productive, efficient, and practical. As the Director of HUHRD, I’m transforming this specialized hospital to be a role model as an R&D oriented hospital.

Hospitals in Korea need to have a closer link to R&D in all aspects, including patients, basic and translational research and also the providers. HUHRD is a relatively small and specialized hospital, so it is more feasible to implement new ideas in management and can be reorganized to meet the R&D demand. I try to keep the balance among my work and maintaining a tight schedule allocating time for patient care as a physician, hospital management as an administrative director, and research as an innovative researcher and organizer.

What are some of the most exciting research projects that this hospital is currently undertaking?

In concert with the “4P” (prevention, prediction, participation, personalization) which will be the theme for the future medicine, we are excited to be a significant hospital in shaping the future. We are currently developing a diagnostic kit that will enable us to make early diagnosis and prediction of rheumatic diseases using genetic and serologic markers using systematic approach and also developing treatments for intractable rheumatic diseases using stem cells.

Are you developing any treatments that could potentially become marketable one day?

We have some ongoing clinical trials in Phases I-IIa, and in the near future, we hope to obtain approval for a mesenchymal stem cell treatment for intractable rheumatic disease.

What has been the response or interest from multinational pharmaceutical companies to potentially work with you?

At the moment multinational companies have displayed much interest in our clinical and genetic database and biobank materials. They are looking to collaborate with us for developing proof-of-concept for a new treatment and new personalized treatment.

How attractive is this hospital as a training ground for positions coming from other countries looking to gain more experience from the expertise that is offered here?

Our hospital consists of five departments. Our main department is focused on the multidisciplinary internal medical approach on rheumatology with surgery, radiology, rehabilitation and pain medicine. We are opening research-based treatments that are relevant to internal medicine for a training ground coming from other countries. For surgeries, foreign physicians come and go easily in terms of physician training, but for this sector I think we need more time as we are dealing with internal, very chronic diseases. Thus it is a little bit difficult to train for a short period. In the near future this research-based clinician teaching will be important and is currently at an incipient stage.

What are some of the efforts you are taking to increase the international recognition of this hospital as a leading center of rheumatism?

For international recognition, we are enforcing networking with leading countries such as Japan or the US. Regarding stem cells we want an inbound model and are planning for patients to come here and get treatments. We are doing this by global collaboration networking with Southeast Asia and the Middle East. In any case it is difficult and risky to see very seriously chronic patients. However, in the future everyone will be demanding for excellent and safe hospitals, as well as treatments for these complicated diseases we need to target.

Where can we expect to find you in the next five years? What would you like to achieve in that time?

I have to decide the direction of research for the next ten years, having already spent ten years contributing to patients or many other people with new treatments and new prevention. I want to train our staff to become even better than I am. The healthcare sector has developed immensely with talented individuals, diligence, speed and accuracy. There is currently a shortage when it comes to the basics but Korea will become a powerful nation for medical treatment in the future.

It is all about choice and concentration strategy. For example, certain hospitals in the US have chosen to focus on a specific area, which is more advantageous than trying to cover everything. It

is much better to specialize and If we do not focus, we will never be number one in any field in the world.

My concept is to create an HIH (hospital in hospital), which is very efficient. Within general hospitals, you can focus on specific diseases, but patients usually have other problems with respiratory, dermatology, eye care, etc but we cannot hire all specialists in our specialized hospital. But focusing on some specific diseases and operations allow for fast decision-making. In general, if you want to decide something in a university hospital, gathering all the opinions, the decision process is very slow. We can use resources or other professors in Hanyang University. It’s easy to meet experts in other fields, such as engineering, economics, or management to ensure our specialization can succeed.

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