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We need to make a push for better communication and collaboration with US investors to be able to develop our industry in Korea further

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Dr Jin Hyoung Kang, president of the Cancer Study Group comments on the scope for oncology drug development in Korea, and the issues resulting from the structure of Koreaâ??s healthcare system. Dr Kang also offers his foresight in relation to the greater role AI and big data will play within the medical field.

Only 20 percent of Korean drug development is in oncology, while it is 40 percent in the rest of the world. Why is Korea a step behind in oncology drug development?

Korean domestic companies often do not have the capital to develop their own drugs independently. Hence, they want to collaborate with big pharma, however, MNCs are usually very cautious when it comes to working together in developing an anti-cancer drug. As a result, in-licensing of oncology drugs has been on the rise in Korea, although the rate of drugs developed in Korea still fell. There are many young Korean companies developing new types of immuno-oncology drugs, which offers hope for a future where Korea has its own anti-cancer drugs. As there are so many competitors in

this market, the current blue ocean will be a red ocean soon with so many new drugs are coming out at the same time. Nonetheless, while the technology is very expensive today, as there are many competitors the price will eventually fall.

How optimistic are you that these cell therapies can be adopted in Korea and become more common in the health system?

The Korean healthcare system is different from the US. The Korean system is very good in principle; the next government will probably change the healthcare system. Patient knowledge will increase over time and will put pressure on politics to change the medical system. Without patients becoming more powerful, AI-mitigated clinical trials and information-driven clinical studies will not happen. The government will have to change their policy on data collection and on public insurance.

In a medical society, the reimbursement system is the main cause of delayed innovative developments. If we found these good drugs, it would have to get validated in a clinical study, but nobody wants that because of the reimbursement system. With President Moonâ??s plan of extending this coverage, clinical trials in Korea will remain very popular, but once a drug is close to approval, companies go elsewhere because there are more incentives, for example in the US.

Korea has highly developed, public medical reimbursement system and a private medical system. in my opinion, there cannot be an overlap between private and public insurance system. The public system is great, but it has to collaborate with the private systems for reimbursement. There should then be a data exchange of information, as without, no effective reimbursement can happen. Currently, there is are two systems with the same patients. A centralized data medical exchange platform is therefore needed to improve communication on reimbursement without any barriers.

What is the current scope of cancer research at this time?

As a medical oncologist, I am currently conducting a clinical trial, prescribing drugs to patients based on the protocol. in the future days, I will prescribe next-generation genome sequencing to the foundation medicine in the US. Today I have two patients who send human tissues there. 14 days later I will get the results in form of genomic data, so I can take a decision whether this patient is suited for the immune therapy. There are researchers are harvesting all of the genomic data and including big data within that.

What is the potential of AI in medicine?

Recently it was said that real-world data will be the new hot topic. The difference between clinical trials and the real-world data is that the latter is only observational study without any clinical excluding or including criteria, which may be different to the former.

Foundation medicine research companies in the US are making use of clinical data, which has been made accessible to the public without restrictions. Big data, which is analyzed by AI, will be a big part of the future of healthcare, with many MNCs without roots in the healthcare industry now entering the market. In the near future, the main share of medical services will be carried out by big players now entering the market, like Google and Amazon.

In the future, we will definitely prescribe anti-cancer agents based on the information of genetic variation studies. How we will interpret the lab data, will be the big challenge. As it looks now, it will be the digitalized through the help of AI. The question is how the physician fits in here to take a decision. There will be no space for clinical trials because many features of the generic anomaly will come to me and as a physician, I have to take a decision. The outcome will of that decision will then go to the main computer.

How adept is Korea in adopting genomic data and using it in the health system?

Seoul is the leading city in clinical trials worldwide. Nevertheless, we have some regulatory issues, which are a big barrier to development as there is a clear lack of foreign investors. We need to make a push for better communication and collaboration with US investors to be able to develop our industry in Korea further. Privacy laws play a big role here, as one of the main hurdles. Unfortunately, the government has not been moving much from its current position yet, so it is quite hard to foster collaboration. We are working with hospitals and the industry to change this position of the government.

The current observation is that the government has no experience in handling this data. The Korean government has to prepare for the future as the medical system will change dramatically. They should just support the funding of a specialized institute which collects the medical data of Korean patients. This database will then be shared with healthcare companies as it is their form of business. On the way, the information will then be used for patient treatment. Centralizing this data gathering process is better than information collected by private parties, who only have a financial interest. Foundation medicine could be the best player at the centre of the healthcare business system in the future. Roche for instance has just merged with a foundation medicine institute. For international collaboration, it is essential to have a centralized database system.

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