

Government Regulations on Cellular Therapy and Proposed Approach Related with These Products by KFDA

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Advances in biomedical technology has enabled the research and use of novel therapies in cellular transplantation. A number of trials using chondrocyte and autologous skin products are underway and will soon become commercially available for clinical utilization. However, the Korea Food and Drug Administration currently lack systematic regulations for efficacy and safety evaluation of the emerging therapies. Specifically, dose related studies are uncontrolled and availability of clinical research centers is inadequate. Thus, patients are receiving therapy without guidelines for indication, dose, and adequate safety profiles. We propose criteria for cases in which these therapies can be used and advocate IRB determined quality assurance for future research.

Key Words: Cellular therapy, regulation, KFDA

Due to advances in bioengineering technology and the introduction of a number of biomedical cellular therapy products, the number of various cellular transplantations has been increasing. As many of these products have been proposed to be utilized in novel ways in medical practice, criteria for clinical evaluation is necessary to assess their safety and efficacy. Recently, the Korea Food and Drug Administration (KFDA) approved chondrocyte products and autologous skin products (developed by Bioventure Company) with multi-dimensional evaluation from the industrial, academic, and governmental points of view. Four other cell-based products, that are being considered, are currently undergoing clinical trials, while eight others are undergoing phase one

trials. In the near future, as these trials are completed, a number of cellular therapy products are expected to be commercially available. Policies and regulations for these cellular products have begun to be discussed by the KFDA. In June, 2003, the KFDA sponsored workshops and developed draft documents entitled "Current situation of government regulation on cell and tissue engineering products and prospects related with these products".¹

In this paper, I will comment on the fundamental goals of Korean government regulation on the aforementioned cellular therapy products as they pertain to current regulations, their associated problems, and the prospects for future improvement.

Oversight of Cellular Therapy Products by KFDA

The three goals for human cell and tissue products by current KFDA regulations are 1) to increase clinical safety and effectiveness for patients, 2) to secure international competitiveness in the field of cellular products under the oversight of KFDA, 3) to prevent the potential for transmission of communicable diseases.

The additional regulations and the degree of regulations that will be revised, amended or supplemented in the future would be based on the varying levels of risk determined.

Major concerns that we currently face

Because KFDA has not finalized its regulations for the emerging therapies, there are inconsis-

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tencies, occasional oversights, loopholes, and in some cases, confusion in policy regulation.

In recent years, some manufacturing industries publicly reported positive outcomes based on trials that were illegal and unapproved by the KFDA. According to the KFDA, some drugs administered to patients were not systematically reviewed for quality assurance. Moreover, dosages were subjectively based on anecdotal clinical experience rather than by carefully planned scientific research, making dose consistency near impossible from clinician to clinician.

Therefore, clinical outcome was not reproducible, and the dose dependent side effect profiles were difficult to establish. In some cases in which dosages were evaluated to assess efficacy and safety in patient management, no controls were used. The lack in methodology in studying these new therapies renders any positive benefit of the drugs invalid. We cannot overlook the potential damage that can be done with the current lack of methodology in drug administration, because patients' health is at significant risk.

The evaluation system for cellular therapy products and its current problems

Although systematic KFDA approval of all cellular therapy products is warranted in establishing efficacy and safety profiles, some structural barriers impede feasibility. First of all, there are no established global consensus standards on evaluation of advanced technology. Secondly, the paucity of research centers in Korea limits pre-clinical and clinical applications of these products. And thirdly, the KFDA lacks the staff and infrastructure necessary in expedient decision making. Thus, for active clinical research of cellular therapy products and subsequent commercialization, we need to construct a methodical evaluation system to secure efficacy and safety in patients undergoing these emergent therapies.

Realistic solutions

As Korean policy implementation often requires an extended amount of time, it is difficult to predict how quickly proposals for evaluation of cellular therapy products can occur. Therefore, we

will outline a few realistic solutions to facilitate the process.

In terms of clinical application, we propose that patients be offered emerging cell and tissue based products only in cases in which patients do not have alternative treatment options. This clinical situation would have to be determined by physicians' judgment and informed patient consent.

In terms of clinical product research and commercialization, in-hospital IRBs should approve both the methodology for research and the ethical considerations related to each investigation.

Quality assurance and investigation of drug efficacy and safety are essential responsibilities of the KFDA. The KFDA is prepared to implement programs that propose specific actions to address the current problems. In addition, President Noh promised to give full support for this project during his visit early this year.

Conclusions

In rapidly emerging science and technology, a vast array of potential dangers can emerge, especially in the face of improperly interpreted research outcomes. Although the hidden hands characteristically controlled the medical and pharmaceutical markets in the past, it can no longer exist. Increasingly, medical ethics and patient trust is crucial in such cases as cellular therapy product administration. Actions need to be taken to provide some basic foundations for long-term development of cellular therapy products.

Although the overall conditions in Korea are not optimal, I believe that consistent cooperation by industry, academia and government would bring about a synergic effect for the development of cellular therapy products. We hope that today presentation at Yonsei Biomedical Symposium would provide some clues to resolve the problems we face.

REFERENCE

1. Current situation of government regulation on cell and tissue engineering products and prospects related with these products. KFDA, 2003.