

Ethics concern on biotechnology for emerging infectious disease

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Dear Editor,

The emerging infectious disease becomes the big concern globally. In the past year, 2016, the new emerging disease, Zika virus infection becomes the big issue for many countries around the world. To manage this new infection, there are several biotechnology researches on diagnosis and treatment. The rapid development of biomedical technology applications against the rapid spreading of infection can be seen and this is an interesting management against emerging infectious disease [1].

Along with the launching of several new biomedical tools to manage diagnosis and treatment of Zika virus infection, the concern on the ethical issue should not be forgotten [2]. Here, we would like to discuss on the ethical issue on biotechnology for the new emerging infectious disease. First, the basic ethical issue in health science should be mentioned. Indeed, any new technology research and development for fighting the infectious disease must follow the basic ethics in health sciences. The basic biomedical concern on patient's right, clinical trial, human and animal experiment as well as academic and publication ethics have to be strictly followed. However, as a new emerging disease with a rapid spreading, the violations of basic rules might occur. For example, the trials of vaccine in emerging infectious disease situation might not complete and the new vaccine without the complete data on efficacy and safety might be launched for use [3]. This situation is well described in the previous worldwide outbreak of atypical influenza [4]. The use of new diagnostic tool or new drug that is not fully approved can be a big dilemma. Although it might successfully stop the disease outbreak of merging infectious disease, it might pose the health risk in long term. In addition to the basic concern, since there are many new coming biotechnologies that can be presently applied for management of emerging infectious diseases the specific concern on

those new technologies should be mentioned. For example, the use of nanobiotechnology and omics-technology are the actual new useful biotechnology in health science and medicine. Nevertheless, the ethics on those new biotechnologies are limited mentioned. In case of nanobiotechnology, the lack of sufficient data on the long term effect of nanomaterials becomes a big ethical dilemma in allowing the use of new nanodiagnosis and nanotherapy against new emerging infectious disease [5]. In addition, the expanding concern on ecotoxicology and microbial toxicology are the important issues that all health biotechnologies have to realize [6]. For the bioinformatics, the issues on data management, protection and privacy become the emerging ethical concern [7]. As already mentioned, while the new health science biotechnologies are warranted for the possible roles in counteracting to the new emerging pathogens, the issues on ethics have to be parallel recognized.

Conflict of interest: None

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