



Gene Therapy: Ethical Issue for Developing World

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The new biotechnology is usually the useful thing for biomedical society. There are many new emerging biotechnologies that exist and widely available at present. The usefulness of the new technology can be expected. On the other hand, the possible adverse effect of the new technology should also be kept in mind. In regulation of the new biotechnology, there must be the good control of users and technologies. At present, gene therapy is a new biotechnology based on advance genetic knowledge. The advantage is medicine is expected and there is the need for control of this new technology. For control of the new technology, the new law is usually needed. Nevertheless, the better control should be the ethical control. If one has a good ethical practice, the problem should not occur. The ethical issue on gene therapy is very interesting. As noted by Fogleman et al., As the technology progresses, it is important that the ethical considerations herein emerge and become more established [1]. Portin noted that until now, all gene therapies in the world have belonged to the regime of somatic therapy, germ line therapy having been a theoretical possibility only and mentioned that In addition to technical challenges, severe ethical problems are associated with germ line therapy, demanding opinion statement [2].

There are many ethical aspects on using gene therapy in medicine. First, as a genetic technique, the basic ethical concern on genetics can be applied. Since the genetic data is useful for prediction of future disease, the privacy of patient's data is an important issue. This is also an important issue in gene therapy. A more complex ethical issue is on the use of the new technique without complete data. During trial of gene therapy, the main ethical question is the safety and risk of the technique. Getting an informed consent is the basic principle in

medical ethics. Nevertheless, without the complete knowledge, the complete data cannot be given to the patient; hence, the informed consent principle might be easily violated. Focusing on clinical trial using maternal gene therapy, Sheppard et al. mentioned for the two main questions: 'is it ethical to give a pregnant woman a potentially risky treatment from which she does not benefit directly? and is it ethical to treat a condition of the unborn child, who may then be born with a serious disability when, without treatment, they would have died? [3]. Sometimes, the disguising might occur if the technique is misused by an unethical practitioner. In addition, as a new technique, we do not know its exact long term effect. This is also another widely discussed ethical issue regarding gene therapy. Pergament mentioned that there will be renewed debates on the potentially controversial applications of these technologies because of their capability to genetically alter the human germline and thereby future generations [4].

It is no doubt that the regulation of cell therapy and gene therapy products is a major challenge With rapid growing of the gene therapy techniques, we should not forget on the most important issue, the ethics for gene therapy [5].

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