Issues of Genetic Modification in Human Embryo and its Future Orientation

So Yoon KIM (Yonsei University College of Medicine, South Korea), Hannah KIM (Yonsei University College of Medicine, South Korea), Sung-Hae KIM (Yonsei University College of Medicine, South Korea),

BACKGROUND: In this study, we aim to examine legal aspects of human germ line gene editing in South Korea, focusing on the Bioethics and Safety Act, which in fact regulates all human and human biological material related studies in the country. After the Chinese scientists from Sun Yat-Sen University have published their study results, in 2015, on germ line gene editing using human embryo – although it was modified not to give birth to a life – the voice of concern arose among the scientific community, emphasising the imperfection of the technology and undetermined risks that could be brought to human beings; therefore, a moratorium was called immediately. However, a moratorium is a moratorium, something that will be lifted one day. We cannot prevent the technological advancements that are related to germ line gene editing, including those that use CRISPR/Cas 9 system. The Korean government has been further increasing its investment on genomic research since 2014, including that of human, through the Post-Genome Technology Development Program. Also, the National Assembly of Korea has recently passed the Bioethics and Safety Act partially amended, hoping to relieve its strong regulations on gene therapy and its clinical studies. However, the amended Act, which is to be effective as of June 30, 2016, restricts applications of the technology to the somatic cells only, and prohibits the use of human embryo and germ line cells in gene therapy studies. Certainly, this amendment of a regulatory act seems not enough to promote human genomic research in general, compared to its increasing investment as future industry. Therefore, we propose a legislation of a new promotion act based on the Personalised Medicine Technology Promotion Act that once took a motion in the National Assembly back in 2013.

METHODS: literature review and legal analysis.