MP03-S1

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Chairperson(s): Dal Mo Yang *(Kyung Hee University Hospital at Gangdong, Korea)*

Another Feature of Ultrasound: Drug Delivery and Immune Activation

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Ultrasound is effectively used for the diagnosis from long time ago and it has been considered everything that ultrasound contribute to our medical field. However, nowadays, the therapeutic feature of ultrasound is being focused on in scientific and clinical areas. When ultrasound is focused on a point with higher intensity than one that is used in the diagnostic ultrasound, it can generate really diverse feature in our body ranging from tissue stimulation or hyperthermia to mechanical histotripsy or thermal ablation according to its parameter. At first, thermal ablation that focused ultrasound has had been focused on and gave birth to various thermal treatment for tumors in the uterus, prostate, breast, thyroid and brain. Recently the direction of focused ultrasound research is changing to different areas. Among them, drug delivery and immune activation by focused ultrasound are being actively investigated. I will deal with scientific background and evidences related to these issues in my talk. I will show its potential to be succeeded in clinical application.

Overview of my talk

- Scientific background
  1. Drug delivery
     a. Proposed mechanism
        i. Sonoporation
        ii. Hyperthermia
  2. Immune activation
     a. Proposed mechanism
        i. Tumor antigen presentation → Cell mediated immunity

  -Evidence
  1. Drug delivery
     a. Preclinical and clinical
  2. Immune activation
     a. Preclinical and clinical
- Clinical potential
  1. Drug delivery
  2. Immune activation

-Summary