

Prof. Edy: Co- Chemotherapy Enhances Efficacy in Cancer Chemotherapy


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Cancer is a disease that is seen as the most complex and most difficult to treat which requires careful attention from all sciences. Cancer is closely related to most of the biological and biochemical processes of human life, so the approach requires a comprehensive understanding of bio-molecular mechanism in biological system.

According to Prof. Dr. Edy Meiyanto, M.Si., Apt control system disturbance in biological processes can cause changes in physiology. Therefore, it is proper to understand that sickness requires an understanding of the molecular changes that accompany it in order to obtain the appropriate therapy. "Cancer is one of cellular pathological conditions with uncontrolled cell division characteristic," he said in the Senate Hall of UGM on Tuesday (20/3).

In his Professorship inauguration of Faculty of Pharmacy UGM, Edy Meiyanto explained cancer is a disease that has a relatively long latency period. Carcinogenesis begins with the initiation of the cell by carcinogenic agents that cause genetic mutation in the genes playing a role in cell growth process. With the growth driver agent (promoter), both intra-and extra-cellular, the cells will grow and form a tumor mass. "This phase is called the promotion phase which can run for decades. In the end of promotion phase there are genetic changes in some cells, which encourage cells to grow increasingly out of control," the lecturer at Faculty of Pharmacy UGM explained.

Therefore, genetic changes and the more protein expression on the carcinogenetic process became an important base for the development of cancer chemoprevention agent. The agent is expected to inhibit carcinogenesis and can stimulate cancer cell death. "Therefore, the general definition of chemoprevention agent refers to the use synthetic or natural materials, either single or mixed, to prevent, inhibit, and restore the normal function of the progression of the disease," the husband of Niken Iriani and the father of three sons said.



Delivering a speech *Expectation and Challenges of Cancer Chemoprevention Agent Development*, Edy Meiyanto explained chemoprevention agent was originally intended for tumor progression in early carcinogenesis before the invasion and metaphysics. The use of this agent is based on the viewfinder target molecule (protein) which becomes an important marker of carcinogenetic process. "In the development, chemoprevention agent can be used as a complementary agent to enhance the efficacy of chemotherapeutic agents," Edy, who was born in Surakarta, May 2, 1962 said.

An example of the use of chemoprevention agent is to improve the effectiveness of doxorubicin. The use of doxorubicin, a common chemotherapeutic agent used in the treatment of breast cancer, showed low effectiveness and caused toxicity to normal tissues. To overcome this problem, chemopreventive agent is used in combination with chemotherapeutic agents to produce better effects than chemotherapeutic agents alone. "This approach is called co-chemotherapy. Co-chemotherapy may improve the efficacy of chemotherapy drugs and allows the use of lower doses of chemotherapeutic agents that will decrease the toxicity to normal tissue," the supervisor of UGM Students Reasoning said.

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