

Session 2: Update on Chemotherapy of Anticancer Agents**Clinical Application of New Anticancer Agents****Virote Sriuranpong**

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Abstract

Recent advance in the development of several novel anticancer agents has led to significant improvement of outcome of cancer treatment. Major achievements in the field of target therapy have been focusing on identification of newer generation of anti-growth factor receptor. Combinatorial therapy with specific monoclonal antibodies like trastuzumab and pertuzumab to target parallel growth factor signaling pathways may lead to improvement of outcome of breast cancer treatment. In addition, a novel toxin conjugated trastuzumab has been shown to possibly break the resistant barrier of HER2 positive advanced breast cancer. Second generation tyrosine kinase inhibitors (TKI) targeting EGFR mutation, for example BIBW2992 and HKI272, have been studied to overcome the secondary resistance occurred following previous exposure to TKI. Several of these agents have now entered into phase III studies in lung cancer. Other non-TKI targeted agents are currently under intensive studies in several indications. Key targeted non-growth factor receptor pathways involve mTOR survival pathway, protein degradation apparatus, and DNA repair mechanism. Everolimus, a mTOR inhibitor is now a proven second line agent following failure to first line multi-target TKI like sunitinib or sorafenib in renal cell carcinoma. Moreover PARP inhibitors have preliminary shown to be effective in the so called triple negative breast cancer which has no a current specific agent of choice. All of these examples strongly illustrate a new era of fighting against cancer.

Keywords: growth factor receptor, anticancer, tyrosine kinase, mTOR, PARP