Recent Trends in Anticancer Drug Development: Challenges and Opportunities

Aims & Scope:

Cancer is caused by the uncontrolled growth of cells and is major cause of death throughout the world. It has more than 200 distinct types affecting over 60 human body organs. Various strategies employed for the cancer treatment includes surgery, chemotherapy and radiation therapy used either alone or in combination that can significantly impact tumor growth. The biggest challenge for the chemotherapeutic agents is acquiring of multidrug resistance (MDR) by the cancer cells.

Different therapeutic classes of anticancer drugs can be summarized as below:

A. DNA alkylating agents
B. Alkylating and non-alkylating compounds interacting DNA minor groove
C. Antimetabolites
D. Drugs that inhibit hormone action
E. Drugs acting vis radical species, photosensitizer and photodynamic therapy
F. Drugs targeting tubulin and microtubules
G. Drugs that inhibit signaling pathways for tumor cell growth and proliferation
H. Miscellaneous agents

One drug one target approach for the treatment of cancer is not successful and may be responsible for the development of multidrug resistance. Hence the attention is shifting towards the development of single drug that can simultaneously bind to multi targets. The advantage of one drug-multi target approach is that drug can simultaneously target more than one pathway and increases its effectiveness even against multi drug resistance cancer cell lines.

Keywords: Anticancer drugs, chemotherapy, cancer stem cells, radiotherapy, multi-drug resistance, nano particle drug delivery, nne drug multi-target.

Subtopics:

• In silico designing and QSAR studies of potential anticancer agents
• One drug multi target approach for anticancer drug development
• Combination therapy in anticancer drug development
• Nano particle based anticancer drug delivery
• Structure activity relationship studies of new anticancer agents
• Cancer stem cells as target for eradicating cancer
• Challenges in radiotherapy for the treatment of cancer

Schedule:

Manuscript submission Deadline: March 31, 2016