

New Cancer Therapies

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Editorial

Malignant neoplasms are the second cause of death in Argentina, according to official data from the Argentine Ministry of Health, 25% of annual deaths are due to cancer, although it has detected a reduction of approximately 10% mortality rate cancer over the last 15 years. This condition causes between 55 and 60,000 deaths annually in Argentina. Values between 1% and 2.5% of the adult population, with a strong increase as the population ages. The new systemic cancer therapies are the result of decades of investment in research and clinical.

The two-way interaction between the clinic and the lab opened a whole new outlook, with a growing universe of “new molecular targets” possible to be manipulated pharmacologically. The mechanisms of regulation of cell signaling, generation of neovasculature (angiogenesis), cell cycle control, among others, were more openly exposed on the molecular level.

The elite of drugs that access approval (monoclonal antibodies, drugs modulating the intracellular signaling) exhibits new benefits and in turn, raises uncertainty about their potential long-term results in the search for her within the available therapies.

This article is limited to the analysis of drugs used in so-called “adult solid tumors.” One of the practical results of the enormous impetus given to research in Molecular Biology and Human Genetics is the development of a broad category of new drugs, called “new molecular targets therapies” or “targeted therapies”

Molecular Biology and New Therapies

This is a heterogeneous group of new molecules, designed to interfere with several critical mechanisms for survival, proliferation and function of the tumor cell, so as to achieve a relatively selective attack on the malignant cells as opposed to toxicity relatively widespread and indiscriminate conventional cancer chemotherapy.

The discovery of new mechanisms of regulation of cell life and function (both malignant cells and normal) offers the possibility of new therapeutic targets, and via reverse molecularly precise definition of the target of a drug can provide better knowledge cellular regulatory processes in a bidirectional way to generate new knowledge and new therapies. New drugs approved or in development are grouped into several categories:

- a. monoclonal antibodies,
- b. Modulating drugs intracellular signaling,
- c. Angiogenesis inhibitors, cell cycle modulators,
- d. Inhibitors mechanisms “discard” of proteins,
- e. Inductors cell differentiation,
- f. Immunomodulatory.

Monoclonal Antibodies in Oncology

Monoclonal antibodies are biologics, complex chemical structure, obtained by genetic engineering methods. They exhibit the structure of a protein of the immune system: immunoglobulin G. These antibodies then are able to recognize a “white” molecule very selectively.

Today, the term “monoclonal antibody” has been incorporated into everyday language in the biomedical field research, pharmaceutical production plant, and the therapeutic arsenal.