

Anticancer Drugs : Difficulties in Development & Usage

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Cancer is one among the scariest and deadly diseases in the world, terrifying mankind largely for the reason that it is difficult to live through it. Since, cancer results from the unrestrained proliferation of subtly modified normal human cells, it's neither easy to track it nor to curb it. One of the contemporary solutions to alleviate malignancy comprise drug therapy (chemotherapy) despite the very well known fact that majority of drugs used for cancer treatment are cytotoxic that work by interfering in some ways with the operation of the cell's DNA.

Cytotoxic drugs are extremely harmful to the body unless they are specific to the cancer cells in question - a situation highly implausible to achieve because of subtle modifications that transform a healthy cell into a cancerous one. Thus, it is imperative to have new drugs that are more discriminating for cancer cells and consequently have lesser side-effects. Gone are the days when the specificity of drugs was to be worked out on animals, now it is possible to have specific drug for cancer specific cells through computer assisted drug design technology. Even then, over the last fifty years, more than 500,000 natural and synthetic chemical compounds have been tested for anticancer activity, however, barely 25 of them are commonly used these days. At present, drugs are on hand that significantly downsize the mortality rates in cases of leukaemia, testicular and ovarian cancer, ensuring longevity of life. Still, we have miles to go before truly curative drugs would be available for most cancers since it is not so easy to synthesise a drug that can discriminate between a normal cell and a mutated one.

Keywords: Cytotoxic drugs, anti-cancer drugs, cancer specific drugs.

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