New strategies for cancer drug development urgently needed

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Millions of cancer patients worldwide may soon be able to receive more effective, personalized treatments for their disease thanks to developments in the understanding of cancer biology, experts will say at the Cancer Biology for Clinicians Symposium organized by the European Society for Medical Oncology (ESMO) in Nice this week.

However, to make the most of this coming transformation, governments, pharmaceutical companies and doctors urgently need to adapt the way drugs are developed, the experts say.

"Cancer therapy is arguably at the most exciting time in its history," said José Baselga, from MGH Cancer Center in Boston, USA, co-chair of the symposium and ESMO Past-President. "It is at the confluence of two new movements, one toward personalized medicine and the other toward the use of new molecularly targeted cancer therapeutics that exploit the tumor's genetic and molecular signature. These movements provide many challenges, but also the opportunity for making paradigm shifts in the way we think of and treat cancer."

Personalized treatment has become increasingly available for cancers over the past decade. This has partly come about as scientists have found that common tumors such as breast cancer are in fact a mixture of several disease types with distinct molecular features. Meanwhile, molecular targeted drugs have also been developed that inhibit particular molecular targets involved in some cancers.

"As our understanding of cancer biology develops further, these kinds of personalized treatments are expected to become available for many more cancer types," said Fabrice André, ESMO spokesperson from Institut Gustave Roussy, France, co-chairing a session at the symposium. "If we want to facilitate the implementation of this kind of personalized medicine, then we urgently need to develop new strategies for cancer drug development."

In particular, it is time to rethink whether the standard model of testing drugs in large phase-III trials is an effective way to bring these targeted cancer drugs to patients, Dr André noted.

"Regulatory processes are becoming increasingly restrictive in providing patient access to potentially innovative new drugs, because even the largest cancer trials generally involve only a small portion of the cancer patient population, and because the drug development process is often more than a decade from the first preclinical study," he added.

This is related to the fact that drug approval usually needs large confirmatory trials that are being done in an unselected population. There is a need for smaller trials done with selected patients to be highly sensitive, a concept that requires the development of molecular selection and relative platforms for doing that.

"It's clear that we urgently need a new paradigm for drug development, including targeted patient selection for clinical trials, shorter duration of clinical trials and improvement of the cost effectiveness of bringing a new drug to the market."

The ESMO Cancer Biology for Clinicians Symposium, a two-day meeting featuring some of the most eminent researchers in the field, is designed to inform oncologists about the ways cancer biology is changing clinical practice.

"What is most exciting today is the active dialogue between clinicians and laboratory scientists who share an interest in applying the new knowledge of cancer biology to the diagnosis, treatment, and prevention of the disease," said meeting co-chair Mario Dicato, from Centre Hospitalier de Luxembourg.

"In the near future, cancer treatment decisions will be based on biology," said the third meeting co-chair Jean-Charles Soria, ESMO spokesperson from Institut Gustave Roussy, France. "It is therefore vital that medical oncologists have the skills and the knowledge to bring these advances to their patients. The future of oncology will be personalized medicine, and the community needs to discuss how this will be implemented."

Provided by European Society for Medical Oncology

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