

EDITORIAL

CANCER RESEARCH AND CARE IN THE FUTURE POST-COVID-19 ERA

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The community of cancer researchers has made tremendous progress against cancer in the past decades. The number of persons who survived cancer has been steadily increasing (1) while the cancer death rate has been continuously declining from its peak in 1991 to a reduction of 31% in 2018 in the US, meaning that 3.2 million fewer cancer deaths occurred than we could have witnessed if those peak rates had persisted (2). Such positive trends and figures are due to our overall improved ability to prevent, detect and also treat cancer, being often able to make the disease chronic rather than lethal, although this progress has not been uniform for all cancer types, subtypes or stages (2). Despite current efforts, however, cancer is mostly a disease of ageing and the number of persons, aged 60 years or more, is projected to double by 2050 reaching 1.5 billion worldwide (3). There is therefore raising concern about a growing population burden of cancer; moreover, the current COVID-19 pandemic has significantly impacted on

the continuum of cancer care (4) delaying cancer screening, diagnosis, and treatment, likely worsening previous projections.

Unfortunately, the expected high burden of cancer will exact a high toll not only in terms of lives but also from an economic point of view: cancer will still be a major public health challenge in the next decades bringing National Health Systems at risk of collapse. In this scenario and with the current high level of knowledge and technologies available, are 'we' - as citizens, researchers, doctors, politicians - doing all we possibly can to tackle cancer? Probably not. The rush to identify ways to detect and treat COVID-19 has thought us that when governments, pharma, public and private institutes invest hugely in research, when all the scientific community, publishers, regulatory agencies are committed towards the same goal, progress can take place at an unprecedented pace. It is time to rethink our strategies to better direct our common efforts to defeat cancer. With this objective in mind, we are launching *An-*

nals of Research in Oncology, a new e-journal aimed at promoting a multidisciplinary integrated approach against cancer serving as a platform for the publication of cutting edge research, spanning the broad areas of basic, translational and clinical oncology. The journal stems as the need of a community of scientists, equally engaged in the war against cancer, to build bridges across the many different disciplines that study cancer in each possible aspect and to promote collaboration, debate and development of innovative solutions.

On these bases, this first issue of *Annals of Research in Oncology* brings together a set of articles focused on different themes. The article by Mangone and colleagues reports the impact of the National lockdown owed to COVID-19 on cancer diagnosis in Reggio Emilia, an Italian province in the Northern area that was heavily hit by the disease (5). The authors analyzed the incidence of all cancers and of cancer of the major sites registered pre-, during and post-lockdown compared to same months in the previous year. Consistently with expectations, they found a decrease in cancer diagnoses, in particular for those cancer types for which screening programmes are conducted (breast and colorectal) and in the older people. The authors suggest that diagnostic programmes need to be resumed at the earliest to limit the impact of diagnostic delay on patients prognosis (5). Lasagna and colleagues instead propose a simple double-step triage strategy that functioned in maintaining cancer patient and health care worker safety during COVID-19 emergency (6). Still on the impact of COVID-19, Cagnazzo and coauthors (7) analyze some major criticalities concerning cancer research and management during the pandemic, including the effect on the ongoing clinical trials and on how the emergency showed the crucial role of expert healthcare professionals, proposing new strategies for the future. Stressing the importance of the need of qualified personnel, Testoni *et al.* (8) describe a new path for the possible stabilization of researchers who have at least three years of experience in Institutions of the National Health System, which was recently introduced in Italy. Italy neglected for too many years research investments and, despite spending on training at considerable costs, many scientists are forced to leave the country while those who stay are left with very poor prospects. COVID-19 once again showed all the insanity of such unwise policies: the governors had to rush to recruit health personnel during the pandemic, even including those who had not com-

pleted the full specialization programme.

The recent advent of immunotherapy, as a new fundamental pillar of cancer therapy, has challenged the health systems because of the high cost of immunotherapy drugs. The article by Di Maio and colleagues analyzes the cost-effectiveness of different dosing schemes of nivolumab in the real world suggesting a strategy that could minimize costs without losing efficacy (9).

Cenciarelli and coauthors present a new possible strategy that could possibly counteract some types of glioblastoma recurrence. In particular, the authors engineered T cells with Fcy-chimeric receptors, which are able to elicit antibody-dependent cellular cytotoxicity, and challenged glioblastoma-derived EGFR+ cancer stem cells in combination with monoclonal antibodies against EGFR. Interestingly, this approach was able to induce cell death in the target cancer cells while T cells generated a fully competent immune response including INF γ and TNF α expression upon recognition of target cells (10).

Delfanti and colleagues report the results of the PLANET trial, a monocentric, prospective, randomized, placebo-controlled, double blind, phase II clinical study designed to assess whether the association of vitamin E and super oxide dismutase could prevent oxaliplatin-induced peripheral neuropathy in colorectal cancer patients. Such neuropathy is a common side effect in patients receiving this chemotherapy regimen. Although the treatment was well tolerated however it was not effective in significantly reducing the toxicity making the authors hypothesize that further approaches should be combined to counteract the multifactorial origins of the neuropathy (11).

Finally, this first issue of *Annals of Research in Oncology* hosts two review articles focused on timely topics: Sepe *et al.* (12) describe the current use of combination immunotherapy approaches to treat and tackling resistance of metastatic renal cell carcinoma, whereas Crucitta *et al.* review fluoropyrimidines metabolism and discuss how gene variants that impair dihydropyrimidine dehydrogenase activity can cause severe toxicities in patients treated with fluoropyrimidine-based chemotherapy, further supporting the recent recommendations for the implementation of pharmacogenomic testing in these patients (13).

We hope that our readers will enjoy this issue and join our community to rethink the way we fight cancer, being more engaging, better focusing our global efforts, better harnessing our technology tools.

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