Found in translation: Annals of Oncology and translational research

The rapid progress in the development of new drugs and diagnostic tools is changing dramatically the way we approach cancer today. We have now matured the idea that only an integrated view of laboratory and clinical research can foster the progress to fight cancer. Translational research is now simply a necessity. The European Society for Medical Oncology gathers a wide community of cancer scientists, covering all the different areas of research and practice, and includes an increasing number of young oncologists, the vital force of the future, who are luckily growing embedded with this new concept.

The need to develop translational cancer research dates back to the 1990s. Studying the inter-citation and content maps of different cancer journals, evidence has been provided of the consolidation in the 1990s of a translational interface that was practically nonexistent in the 1980s, when either a clinical or a laboratory research was strictly polarized [1]. An important consequence of this new way to merge cancer science is the participation of translational scientists in multidisciplinary management teams, now implemented in the majority of institutions devoted to cancer and cancer care.

Different definitions and implications may be intended by translational research. More commonly, it is regarded as the area devoted to moving the information from ‘bench-to-bedside’, thus accelerating the transfer of new knowledge from laboratories to patients in order to improve diagnosis and therapy. In this view, its tasks are ‘Translating preclinical findings into clinical research; validating molecular markers and characterizing mechanisms of action; partnering with industry in the development of novel anticancer agents; conducting innovative clinical research across all phases of drug development and disease sites’ (TRIO, [2]). Altogether, these goals are well summarized in the definition provided by the Translational Research Working Group of the National Cancer Institute: ‘Translational research transforms scientific discoveries arising from laboratory, clinical, or population studies into clinical applications to reduce cancer incidence, morbidity, and mortality.’ Coherently, it includes also phase I–II trials.

But many, in a more pragmatic and comprehensive fashion, interpret translational research also as the body of studies that ensures that new treatments and research knowledge actually reach the patients, improve quality of care in everyday clinical practice and, eventually, impact on the care system [3].

The field of oncology is maturing toward a more in depth understanding of cancers, well beyond the anatomical description of the original site of diagnosis. Translational research studies have started to unlock the biologically, and sometime therapeutically, distinct patient subgroups within each tumor type.

Despite these changes and our understanding of translational research as a necessity, the direct clinical evidence base for its value is lacking, holding back the broad application of correlative approaches. Unfortunately, this is true for the application of biomarkers in most areas of medicine, including pharmacogenomics, metabolomics, and imaging applications [4]. Both funding bodies and academic researchers need to take on this responsibility. It is easy to blame funding bodies for a paucity of practically relevant studies, as there has been very little support given to this sort of work. A recent analysis of the National Institutes of Health translational research portfolio was focused on cancer genetics, an area of research often mentioned as quite promising for translation into routine care [5]. The researchers evaluated the National Cancer Institute grant funding portfolio to assign each grant into a category along the translational research continuum [T0 as discovery research; T1 as research to develop a candidate health application (e.g. test or therapy); T2 as research that evaluates a candidate application and develops evidence-based recommendations; T3 as research that assesses how to integrate an evidence-based recommendation into cancer care and prevention; and T4 as research that assesses health outcomes and population impact] [5]. Only 1.8% of the funded grants were categorized as T2 or beyond, highlighting the disconnection between our expectations for the public good of science and the support to see that the work moves across to practical application. The recently released National Human Genome Research Institute (NHGRI) vision for genetic research contained a strong push toward practical application, but as a promise for the future [6]. But the blame should not rest solely on the shoulders of funding bodies. Rather, the study sections and advisory councils are made up of academic researchers who need to do a better job of shepherding translational research. This will require that clinical trialists, health services researchers, pharmacoeconomists, epidemiologists, and basic scientists to look beyond their comfort zone when proposing concepts for future funding areas, writing of program announcements, and assessment of impact in study section. Many promising scientific discoveries from the past decade are stuck in the so-called ‘valley of death’, with little advocacy to see that the science goes all the way to practice.

Annals of Oncology is committed to helping translational research move across the full bridge to clinical application. In this issue, we present a selection of high-quality original articles, reviews, and editorials [7–14] that highlight the value the journal places on translational research. We enthusiastically
support well-conducted definitive translational studies, at the
discovery, validation, and application stages and encourage the
community to submit their best work to *Annals of Oncology* to
help drive the field forward.

H. L. McLeod¹, G. Tortora², L. H. Rowett³ & J. B. Vermorken*⁴

¹UNC Institute for Pharmacogenomics and Individualized
Therapy, University of North Carolina, Chapel Hill, USA;
²Department of Medicine, University of Verona, Verona, Italy;
³Annals of Oncology, Editorial Office, Lugano, Switzerland;
⁴Department of Medical Oncology, Universitair Ziekenhuis
Antwerpen, Edegem, Belgium

(*E-mail: jan.b.vermorken@uza.be)

disclosure

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