

TRANSLATIONAL MEDICINE: IS THIS A MATTER FOR THE CLINICIAN?

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Medicine has always been a field plenty of interrogations. Patients ask about their complaints and duration of the disease; about treatment and cure. Clinicians, on the other side, query about diagnosis and most adequate treatment options for their patients. While a lot of answers can be found in recent scientific knowledge, in collected experience and clinical sense, there are many questions for which we have no solutions. This fact leads to a constant state of curiosity, stimulating the interest for scientific advances with significance to clinical practice.

A most current issue, nowadays, is the role of medical doctors in research, particularly if basic research should be reserved to biologists and other basic sciences professionals. Or is this also a matter for the clinician?

The clinician's highly trained clinical thinking relies on associative and relational ideas which are constantly being up-to-dated at conferences, medical discussions, by recent literature or pharmaceutical information. This feature constitutes a most important tool to set up urgent and key scientific questions. In other words, it allows medical doctors to put the right *question* at the right *moment*.

Translational medicine is the link between "bench and bedside" that has been missing. It is a scientific approach that bridges laboratory experiments, through clinical trials, to actual health-care applications. Stem cell research is a hallmark of translational medicine. Also, discoveries in genomics and proteomics, as well as recent investigation on immunomodulation approaches, have shown to provide direct beneficial effects to patients by giving new insight to pathophysiology, diagnosis and treatment of specific diseases.

In many countries, medicine is already strongly related to scientific investigation. However, such an emerging vision implicates profound structural

changes, which should begin at medical educational level. Engaging students into research projects will allow them to become familiar with molecular biology methods, laboratory devices and animal model experiments. It contributes for developing a scientific way of thinking that is crucial for new ideas and scientific hypothesis to arouse.

It is also important to re-define the role of medical doctors as health care givers at major university hospitals, where translational projects can be carried on. A major step is to include research/investigation work in medical doctor's routine daily work, providing a balance between clinical practice and science. Moreover, it is essential to promote a motivating scientific environment with interdisciplinary networking (e.g. physicians, biologists, bioinformatics) in order to find new lines of investigation, to perform quality projects and to generate data for publishing in relevant scientific journals.

In the last twenty years, international research foundations and pharmaceutical companies have spent vast amounts of funds on basic research with significantly less return on investment than expected. Moreover, in a period of economical crisis, most efforts should be directed towards solving urgent questions related to diseases of great economical and social impact such as rheumatic diseases, obesity, diabetes and cancer.

It is my belief that translational medical science may become a key path for clinicians to get involved in basic research, allowing medical science to move more rapidly towards major targets. Translational medicine is, therefore, a key process to efficiently and rapidly translate basic research findings into medical practice and meaningful health-care outcome.

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