Editorial

Translating Physiology for wider applications

There has been a paradigm shift in the application of Physiology during last two decades in our country. There is a tendency that Physiology is trying to come out of labs to outside domain. During this period adequate emphasis has been given to 'Clinical Physiology'. This emphasis also extended towards 'Social Responsibility' (1). It is evident from the fact that the themes of several conferences was kept on these lines. The cases in point are the last International Union of Physiological Sciences (IUPS) Congress held at Birmingham and the Conference of Association of Physiologists and Pharmacologists of India (APPICON 2014) held in Puri, Odisha.

Our country is going through a transition to adopt 'Translational Research'. The concept is simple and even simpler to practices. This was first used by National Cancer Institute in 1993 to investigate the connection between genes and risk of cancer. Since then the concept has gained popularity and finding its way in several 'Research' and 'Social' spaces. Recently, an autonomous Institute called Translational Health Sciences and Technology Institute (THISTI: www.thsti.res.in) has been set up in our country. Thus, both science administrators and academicians are in same wavelength and we as scientific community are at the threshold of taking translational research in Physiology to serve academics and society.

The translational research cycle includes four stages; 1. Pre-clinical research data, 2. Clinical Physiology data, 3. Clinical guidelines, and 4. Community guidelines (2). The objectives at each stage present a continuum and require integration in two directions- namely horizontal (within Physiology) and vertical (Physiology with Clinical sciences). It is indeed, like a 'relay race'. The success of which largely depends on competency and skills of individual player, interconnectedness and co-ordination.

Physiology occupies at the heart of translational research cycle. The cycle may begin with 'Physiology' or end up with 'Physiology'. One of the examples is use of ECG in clinical disciplines. The understanding of electrophysiology of myocardium gave electrocardiogram. Consequently, electrocardiogram helped to detect myocardial insult. It resulted in wide use of ECG in clinical practice. It lead to the regulation that each hospital must have ECG machines. It also entered to public domain where it became part of public expositions and science museums.

Therefore, as players in Physiology, we need to remain part component of translational research cycle by doing in-depth research and connect it to next player. The efficiency at component level (in-depth pre-clinical research; robust physiological data, integrating the research to concerned basic field; integrating research to clinical practice; developing guidelines etc.) will result in better scientific delivery to society.

The key mantra for achieving success in translational research continuum for physiologists is to attain competency at component levels and to strengthen the links that connect the components. The links are as important as components for the efficient performance of scientific endeavors. We need to value each component in the cycle and honest integrations. There are strategies available for road blocks in completing the translational research continuum in Physiology (2).

Let 2015 begin with more such endeavors for integrations and translations. Wishing you a very happy New Year.

K. K. Deepak
Executive Editor

References

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2. Seals DR. Translational physiology: from molecular to public health. *J Physiol* 2013; 591: 3457–3469.