

From Chairman's Desk

Researching and designing better medicines is goal of all pharmaceutical researchers. Three fundamental research principles focussed on translational chemistry, translational medicine and translational research yielded numerous medicines and completely changed the therapeutic scenario across the world. Pharmaceutical research has provided great relieve to mankind and combating diseases have become more sure and successful due to development of evidence based medicines. Advances in understanding of the disease processes and mechanisms to control or eliminate the disease have helped in developing and designing safe and effective medications for existing as well as evolving diseases. Pharmaceutical research has huge opportunity to revisit the basic principles and translate them or extrapolate them to drug discovery and development.



The introduction of d-Tubocurarine was based on the initial observation that a natural product in the hot water extract of a South American plant *Chondrodendron tomentosum*, a climbing vine known to the European world since the Spanish conquest of South America, in which arrow head was dipped and used by native Americans during hunting to paralyse their prey. Based on this principle the isolated compound when injected intravenously acted as muscle relaxant and hence inferred that it can be used to paralyse diaphragm during open chest surgery. This was a classic example of translational chemistry in pharmaceutical research.

Sir James Whyte Black's observation that activation of the β -adrenergic system increases sympathetic drive & oxygen consumption within animal cardiac tissue led to the possibility that β -adrenergic blocker might protect the ischemic myocardium and alleviate angina pectoris. Pursuit of compounds to modulate this pharmacological pathway eventually led to the introduction of propranolol, a prototype β -blocker and revolutionised treatment of hypertension. This was a classic example of translational research. However, clinical observation revealed that long biological half-life of propranolol was useful for chronic dosing but not desirable for intravenous administration in emergency room. This limitation of propranolol led to new vista and opportunity to search for β -blockers with ultra short half-life for emergency needs and thus heralded Esmolol an example of translational medicine.

Pharmaceutical researchers must use rational approaches to conceive new hypothesis and properly design research methodology for proof of concept to achieve success. Opportunities in pharmaceutical research are vast and they must be utilized properly. The fundamental principles hold good and give insight into many approaches. Research acumen should be utilized to exploit the principles and extrapolate them to translational chemistry, translational research or translational medicine. Research endeavours are always useful as also a never ending process. In Pharmaceutical research today is better than yesterday and tomorrow will be definitely better than today.

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