EDITORIAL

From Molecule to Patient: Building Bridges Not Walls with Clinical Pharmacology and Translational Medicine

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Disciplines of modern medicine, particularly the ones directly related to clinical practice, are becoming more and more organ-specific or therapeutic area–specific, while the current joint theme across *Clinical Pharmacology & Therapeutics, CPT: Pharmacometrics & Systems Pharmacology*, and *Clinical and Translational Science* made it clear that clinical pharmacology and therapeutics is uniquely diverse medical discipline across therapeutic areas with a broad scope of research and application in the clinic.

Most patients who seek "medicines" as well as the healthcare providers think drugs are something like tablets, capsules, injections, etc., which are commonly used in the clinic. Thus, it is not surprising that colleagues, especially the ones outside our discipline, tend to perceive clinical pharmacology and translational medicine as medical disciplines primarily focused on how small molecules behave in humans. Although it is still very true that small molecules will remain the mainstay of pharmacotherapy, the image of "drugs" and the definition of "human" pharmacology are drastically changing and, therefore, the ways by which clinical pharmacologists establish safety and efficacy of emerging new concepts of nonsmall molecule drugs are unreservedly changing with new technological platforms to allow making drug a drug.

From the editorial viewpoint, the current theme of From Molecule to Patient has captured emerging concepts of new drugs and platforms. Examples of nonsmall molecule drugs are not only therapeutic antibodies, which have already been widely evaluated and utilized in the clinic[1] but therapeutic RNAs and cell-based therapies.[2] In the era of precision medicine, drugs are designed to hit specific therapeutic targets on a molecular basis, and new modalities are expected to pick the fruits that no one was able to reach in the past. This is certainly an exciting change for all the researchers and healthcare providers in the field of clinical pharmacology. New platforms, such as induced pluripotent stem cells, are not only expected to provide new therapeutic concepts of cell therapies for various diseases (e.g., heart disease, macular degeneration, or Parkinson's disease[3]) but also technological changes in how to evaluate and/or predict pharmacological or toxicological effect and pharmacokinetics of new drugs (including small molecules) in the *in vitro*, *in vivo*, and organ-on-a-chip models.[4] The new technologies, integrated into quantitative pharmacology and pharmacometrics, should allow more precise decisions in our clinical pharmacology practice.

Clinical pharmacology and translational medicine are said to be cross-disciplinary for decades, and we realize it is even truer now that we live in very strong and diverse communities of science. Just like the effort of the joint theme across the ASCPT Journal Family, we should break the wall, build a bridge, and improve the practice of making drug a drug. Our communities must continue to be strong and diverse.

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