



Letter to the Editor

Toward a logical integrative medicine: beyond data accumulation

Integrative medicine (IM), which is defined as combining biomedicine with traditional, complementary, and alternative medicine (TCAM),¹ is not only a target model for the development of Korean medicine, but also an adopted model in 40% of medical schools in the United States.² IM tries to accept TCAM critically and scientifically,³ but it remains in a secondary position as an extension of and complement to biomedical medicine.

As a logical premise, science needs a coherent methodology and detailed methods, but a methodology for TCAM does not seem to have established them yet despite many studies on TCAM. There are lots of experimental data and several professional works on the applications of systems biology for TCAM.⁴⁻⁶ However, those outcomes are made for pharmaceutical use and not for integration.

In fact, data alone is not enough. There should be more in-depth correlative interpretation and useful principles to find in the components of the 2 heterogeneous medical knowledge bases, such as syndrome patterns versus biomarkers, biochemicals and omics data.⁷ Both individual case research and comprehensive platform study are needed at once. These 2-way approaches will be gradually combined by logical linking and interpretation whenever experimental, clinical, and translational research papers are written following a logical basis and process.

In this regard, Kim et al.'s protocol research for treating the common cold can be a useful example of the need for a logical basis.⁸ They plan to compare 3 groups containing pathologically opposite Eunkyoosan (Yin Qiao San) and Samsoum (Shen Su Yin) in the protocol. If there is no hypothesis describing the pathopharmacologic correlation between the two prescriptions, then creating the logic of scientific evidence on prescriptions may not be sufficient. In order to achieve an evidence-based integration, logical bases should be obtained from hypothetical statements on differential diagnosis and treatment, evaluation, and deduction after testing, and formalization of inductive inference should be established to confirm the relationship or difference between the 2 prescriptions.

John Platt, a molecular biophysicist in the 1960s and advocate for strong inference, analyzed that the reason for rapid progress in the fields of molecular biology and high energy physics was the accumulative method of inductive inference.⁹ Thereafter, the gen-

eral procedure, which involves creating an alternative hypothesis, planning a crucial experiment, getting a clean result, and recycling until achieving subhypotheses and refinement, has become a standard in medical researches. Subsequently, the same statement on strong inference was also discussed in another journal's editorial.¹⁰

Therefore, if *Integrative Medicine Research* contents are based on researches that are logically integrated between experimental data and the platform research on the structure and functional systems of mind and body, the journal will guide us toward strong evidence of TCAM.

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15 March 2020

Available online 19 April 2020