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EDITORIAL

Making Evidence-based Decisions in the Clinical Practice of Integrative Medicine

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In 1948, the first clinical paper adopting the protocol of randomized and controlled design was published in *British Medical Journal* by Bradford Hill, a noted British biostatistician, who introduced rigorous theory of mathematical statistics into clinical design the first time and successfully evaluated the therapeutic effect of streptomycin on tuberculosis(1). In 1989, clinical trials and systematic review demonstrated that, of 226 maneuvers in obstetrics and childbirth, 20% were beneficial, 30% were harmful or of doubtful value, 50% had no randomized clinical trial evidence available(2). The result astonished the whole medical community and also brought valuable inspiration for clinical practice. It indicated that experience was unreliable, and all medical interventions should be based on rigorous research evidences. After that, the evidences from a series of systematic researches brought tremendous impacts and challenges to the efficacy, safety and cost-effectiveness of previous accepted strategies of therapeutic, rehabilitative, and preventive regimens. Evidence-based medicine (EBM), a new paradigm for medical practice, emerged(3) and modern medicine has been experiencing a dramatic transition from experience-based medicine to EBM.

There were strong ties between Chinese medicine (CM) and EBM. In the book of "Evidence-based Medicine: How to Practice and Teach EBM", the author Dr. Sackett, one of the pioneers in EBM, said he drew his inspiration for the concept of "Evidence-based medicine" from "textual criticism" in the Qianlong Period of Qing Dynasty, when the texts were used as "evidences" to explain ancient books and records(4). As a typical traditional medicine, the shortage of objective and quantitative criteria in evaluating therapeutic effect is one of the largest obstacles for CM to move towards the world and received wide recognition. The emergence of EBM provides objective therapeutic evaluation of CM or integrative medicine (IM) with new thinking and method(5-8). Since both complementary and alternative medicine (CAM) and Western medicine (WM, also known as orthodox medicine in Western countries) have their own superiorities, the integrative medical model of patient-centering care and a combination therapy with both botanical and chemical drugs has been evolving into a new trend of the modern medicine in preventing and treating diseases(9-11). As the combined applications of CAM and WM are increasing(12-14), more and more concern on their interactions(15) are aroused. As a typical complex intervention(16), whether IM is superior to either CAM or WM, how the combination of CAM and WM play their roles in enhancing efficacy and reducing toxicity from each other, or how to optimize the IM therapeutic regimen, all are not clear. All of these issues warrant further investigation and need more evidences. The introduction of EBM concept brings scientific research and clinical practice of CAM and IM with favorable opportunity and breakthrough point.

EBM is different from prior medical practice, which puts a greater emphasis on the conscientious, explicit, and judicious use of the current best evidence, together with individual clinical expertise, patient values and preferences in making decisions about the care of individual patients(4). Although the concepts of EBM have been developing since clinical trial publications became available, the formal construction of formulating a clinical question and searching available evidence with a critical eye towards applying it to patient problems have evolved in the recent 20 years. The evidence-based practice (EBP)(4) generally include five steps: converting the need for information

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into answerable questions; tracking down the best evidence to answer the question (searching related literatures); appraising the evidence for its validity (closeness to the truth), importance (effect size) and applicability (in your own practice); integrating the evidence with your own expertise and the patient's unique biology, values and circumstances; evaluating your effectiveness and efficiency in executing the above steps and seeking ways to improve them. Among these steps, evidence retrieval and use based on PICO (Patients, Intervention, Comparison, Outcome) questions have been given much attention and these are increasingly becoming a basic skill for clinical doctors. With a lot of practicable attempts by many organizations at home and abroad, the EBP methods based on PICO questions have been gradually formulized and popularized internationally, making EBP more and more simplified. However, only in recent years has EBP method based on PICO questions come into domestic people's eyes and has drawn more and more attention. How to conduct an EBP based on PICO questions is still a newborn thing for most doctors, especially for CAM and IM doctors.

Since IM doctors require not only abundant knowledge of CAM but also in-depth understanding and rational application of WM evidence, as well as familiarity with herb-drug interactions between WM and CAM during a combination therapy, it is of vital importance to retrieve relevant evidences. For busy CAM or IM doctors, using PICO question formulation and the corresponding website is a quick way to obtain clinical evidence, which can provide valuable clinical references. In this issue, Dr. Yan, et al introduced an EBP method according to literature retrieval through PICO questions and CAM topics with a practical example of atrial fibrillation(17). Knowledge of diseases and WM treatment can be acquired by literature retrieval through PICO questions, while searching by CAM topics may provide evidence of CAM. There were a lot of valuable and informative websites or references in this paper, which might be very helpful for CAM and IM doctors. The process from formulation of PICO questions, retrieving website with different characteristics to analyzing, and accepting or rejecting retrieval conclusion, provided CAM or IM clinicians with a very explicit flow path for EBP. The authors held that literature retrieval through both PICO questions and CAM topics was an ideal EBP method for IM.

Nevertheless, the scientificity and reliability of evidences are often relative, which need to be replenished and perfected constantly. Some evidences from authoritative clinical trials were even negated by later studies. Since the standard in CM or CAM evidence hierarchy is still under study, the value of CAM thematic retrieval method remains very limited. During retrieving, conclusions in different evidences may be inconsistent sometimes, just like the evidences for herb-drug interaction between warfarin and Ginkgo in the retrieval conclusion of Dr. Yan, et al(17). At that time, you have to learn more information in your retrieved evidences about their patient selection criteria, study design and endpoints, and integrate them with patients' specific situation, doctors' clinical experience and pharmacology knowledge of both CAM and WM to analyze and make final choice, so that more objective and accurate evidences can be addressed for a specific clinical decision-making. Although there were few high-ranking evidences on CAM or IM available at present, EBP will undoubtedly help us use the best evidence, reduce variation in clinical practice and make us more confident in medical decision-making.

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Corrigendum

In the original article entitled "Reflections on the Research Status of Kampo Medicine: A Most Rewarding Visit to Japan" published in Chinese Journal of Integrative Medicine 2010;16(4):357-360, the term "interstitial hepatitis" on page 358, the left column, lines 38-39, should be "interstitial pneumonitis". The authors wish to apologize for this error.