



Trends in Phytochemical Research (TPR)

Journal Homepage: <http://tpr.iau-shahrood.ac.ir>



Guest Editorial

Evidence-based phytotherapy: what, why and how?

SATYAJIT D. SARKER ✉ AND LUTFUN NAHAR



Medicinal Chemistry and Natural Products Research Group, School of Pharmacy and Biomolecular Sciences, John Moores University, James Parsons Building, Byrom Street, Liverpool L3 3AF, United Kingdom

© 2018 Islamic Azad University, Shahrood Branch Press, All rights reserved.

With the ever-increasing popularity and extensive usage of phytotherapy all over the globe, it has now become absolutely necessary to ensure its efficacy, toxicity and adverse effects on the basis of suitable scientific evidence, and to put proper measures in place to regulate practice of phytotherapy as well as phytotherapeutic products. Before getting into the nitty-gritty of evidence-based phytotherapy, let us quickly remind ourselves of the definition of phytotherapy. Simply, phytotherapy, the term first introduced by the French physician Henri Leclerc in 1993, is the plant-based therapy or medical practice that is offered to treat and/or prevent various human diseases (Mills and Bone, 2000; Schulz et al., 2001). There are two distinct pathways for phytotherapy: traditional phytotherapy and rational phytotherapy. Whilst traditional phytotherapy is based exclusively on its many years of experience and traditions as a remedy (traditional and folklore medicinal uses), rational phytotherapy applies evidence-based approach involving strict official and scientific benchmarks for the efficacy and safety of the therapy. The pathway that includes rational evidence-based approach for phytotherapy is now widely known as evidence-based phytotherapy (Fürst and Zündorf, 2015; Colalto, 2018).

Evidence-based phytotherapy must employ rational approaches, based on scientific and/or clinical evidence, to ensure therapeutic efficacy and safety of plant-based therapy, and to offer informed and enhanced patient care. Whilst evidence-based approach, which is a problem-oriented approach, has long been present and appreciated in conventional medical practice to improve patient care by considering the quality of clinical evidence (Sackett et al., 1996), it is somewhat much more problematic to incorporate this approach in phytotherapy because of several 'difficult to standardise'

variables associated with phytotherapeutic products.

Some of the main bottlenecks present in evidence-based phytotherapy include the qualitative and quantitative variations, and phenotypic and genotypic variabilities in phytotherapeutic products, different extraction methods, and geographical and climatic differences affecting the quality of phytotherapeutic products arising from considerable variations in the content of active and/or toxic principles exerting different and inconsistent therapeutic outcomes for the patients. However, despite these challenging issues, evidence-based approach in phytotherapy is the most preferred way of offering optimum patients' benefits and satisfaction.

To offer high quality evidence-based phytotherapy aiming at achieving the best possible treatment outcomes and care for patients, one must recommend phytotherapy only on the basis of best quality scientific/clinical evidence, provide safety data on toxicology and possible interactions with other conventional drugs and/or food, optimise clinical practice, and assess the quality of phytotherapeutic products. In order to meet these, one should conduct systematic, focused and critical literature review or rely on good quality reviews if available, obtain good quality *in vitro* and *in vivo* data including controlled clinical trials, secure comprehensive phytochemical data, and wherever possible, conduct appropriate *in silico* studies (Sarker and Nahar, 2018).

Unfortunately, in many cases of phytotherapy used today, there is simply not enough acceptable quality of evidence available. Thus, there is a pressing need for further work on compiling evidence for phytotherapy, and it is always preferable to adopt an integrated approach incorporating the above evidence sources or routes to obtain enough evidence for phytotherapy to ensure patients' safety and best clinical outcomes.

✉ Corresponding author: Satyajit D. Sarker
Tel: 0151-231-2096; Fax: 0151-231-2170
E-mail address: S.Sarker@jmu.ac.uk



It is also imperative that there is a clear demand for evidence-based phytotherapy guidelines, which could offer new healthcare approaches to human ailments.

References

- Colalto, C., 2018. What phytotherapy needs: Evidence-based guidelines for better clinical practice. *Phytother. Res.* 32(3), 413-425.
- Fürst, R., Zündorf, I., 2015. Evidence-based phytotherapy in Europe: Where do we stand? *Planta Med.* 81(12-13), 962-967.
- Mills, S., Bone, K., 2000. *Principles and Practice of Phytotherapy-Modern Herbal Medicine*, Churchill Livingstone, Edinburgh.
- Sackett, D.L., Rosenberg, W.M.C., Gray, J.A.M., Haynes, R.B., Richardson, W.S., 1996. Evidence-based medicine: what it is and what it isn't. *Brit. Med. J.* 312, 71-72.
- Sarker, S.D., Nahar, L., 2018. *Computational Phytochemistry*, Elsevier, U.S.A.
- Schulz, V., Hänsel, R., Tyler, V.E., 2001. *Rational phytotherapy: A physician's guide to herbal medicine*, 4th Edition, Springer-Verlag, Heidelberg.