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Therapeutic Efficacy and Safety of Traditional Ayurvedic Medicines: Demands for Extensive Research and Publications

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Editorial

Ayurvedic medicine is time-tested traditional system of medicine, originated about 5000-years back in India [1]. Ayurvedic medicines can be an a potential and effective alternative for the treatment of diseases like cancer, diabetes, renal impairment, immunoimpotency or sexual weakness, weight loss or to reduce obesity, AIDS, immunosuppression or autoimmunity, heart diseases, neurological disorders, etc. in which modern medicines have limited or no success rate or have serious adverse-effects. Ayurvedic medicines are popular and mainly used by the people of Asian developing countries including India, Bangladesh, Pakistan, Afghanistan, Nepal, Sri Lanka, Myanmar, etc. although some people in developed countries like United States of America, Canada, United Kingdom, Australia, etc. are using Ayurvedic medicines to some extent as dietary supplements. Ayurvedic medicines are prepared from different parts of plants, such as, leaves, roots, barks, etc. or whole plants with/without the incorporation of different types of metallic and non-metallic substances called as 'Bhasma'. In spite of long history of traditional usage of Ayurvedic medicines, their scientific pedestal is time-demanding with the advancement of medical, biological and pharmaceutical sciences due to the several reasons. Firstly, in order to introduce and spread the effectiveness of Ayurvedic medicines for the treatment of diseases globally so that people all over the world can keep faith on it on the basis of scientific evidences. The concept that natural medicines are devoid of toxicity or free from all sorts of side-effects is not widely acceptable all over the world, especially to the people of developed countries, without clinical and biological evidences of therapeutic efficacy and clinical safety reports. Secondly, recent debate on heavy metal toxicity in Ayurvedic medicines, such as, the presence of harmful levels of lead, mercury, arsenic and other metals [2-5] demanding the extensive research on the safety and efficacy issues of Ayurvedic preparations. It is important to mention here that metals (bhasma) are included in Ayurvedic medicines as active ingredient(s) of the preparation. Ayurvedic system also warned about the possible toxicity of the heavy metals which included in its formulation and also properly indicated to detoxify the used heavy metals by special procedures, such as, heating. Thus, the use of metals and heavy metals in the formulation of Ayurvedic medicines is not unethical but it should be within the limit and must be ensured about its non-toxicity in the final preparation by adopting special techniques or methods. Therefore, the level of heavy metal should be strictly controlled during the manufacturing and quality control of Ayurvedic medicines. Besides, preclinical and clinical metallic toxicity studies of each of Ayurvedic preparations should be scientifically reported. Thirdly, Asava and Arista are two popular forms for the preparation of Ayurvedic medicines in which fermentation technique is applied with polyherbal materials [6]. Several enzymes may be produced by fermentation in the manufacturing process of Ayurvedic medicines which also ultimately contribute their pharmacological activities along with other chemicals derived from the formulation. In addition, there is a possibility of bacterial contamination in the preparation of Ayurvedic medicines. Therefore, each of the Ayurvedic preparation must be tested for microbial contamination in the quality control procedure. The therapeutic efficacy and safety of each of Ayurvedic drug does not only depend on the individual properties of each added ingredients, rather it comes from the collective properties of all the ingredients when homogenously mixed them in a preparation.

Although scientific research and the number of publications on Ayurvedic drugs are increasing day by day, considering the therapeutic significance of Ayurvedic medicines, numbers of preparations and parameters to be evaluated, those reports are considered to be insufficient. Therapeutic assessment of many preparations and their different safety reports are still unexamined and unreported. In this modern age, scientific evidence is very much essential for better acceptability of a therapeutic agent along with the history of traditional use of that medicine. Recently, Chinese herbal medicines are extensively assessed and analyzed for therapeutic benefit, safety and quality issues. That's why the popularity and market value of Chinese herbal product market is expanding. At present, China shares over 6 billion USD of herbal products market globally, whereas Indian share is less than 1 billion USD [7]. Insufficient scientific evidences and only few published reports in support of the therapeutic efficacy and safety of Ayurvedic medicines may be one of the several reasons for this. Hence, extensive researches on Ayurvedic medicines and their reporting in international journals are very much important and time-demanding. Extensive in vitro, in vivo, and clinical trials and observational study reports are badly needed for the evaluation of each of Ayurvedic polyherbal preparations and publications of those investigated results in international journals. Actually, Ayurvedic herbal medicines are very cheap compared to Allopathic medicines, which is not sometimes affordable for poor people in the developing countries. Traditionally, Ayurvedic medicines are very effective for the treatment of diseases without or with minimum side-effects compared to Allopathic medicines. Now only needs scientific evidences in support of their therapeutic effectiveness and safety. If this can be done, Ayurvedic medicines may be a potential source of alternative treatment in case of the failure or less effectiveness of modern medicines. In summary, it can be concluded that Ayurvedic medicines has glorious historical background for the treatment of all diseases with minimization/without side-effects. To keep faith on Ayurvedic medicines and to spread its popularity all over the world, extensive preclinical, clinical and observational studies on animal and human for the efficacy and safety of those medicines as well as publications of those results are badly needed. Positive results of the investigations

may be highly accepted to the international community including physicians, scientists, practitioners, and other people. In case of negative findings for therapeutic efficacy, toxicity, adverse-effects, etc. the effective steps should be taken with the modification of the formulation, manufacturing, administration and doses of that specific preparation. All the above steps may be taken for the betterment of Ayurvedic medicines and welfare of global health.

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