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Adaptogenic effects of some medicinal plants: Integration of traditional and modern concepts

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Stress related disorders contribute to a significant proportion of global illnesses and adaptogens are herbal agents which have the potential to attenuate stress effects. Since its inception, the concept of adaptogens has evolved considerably and newer mechanisms have been proposed. As these agents have to be administered for a reasonably long period of time, the benefit versus risk ratio is important and herbal agents are definitely preferable over their synthetic counterparts. The brain, HPA axis and immune system play a crucial role in the expression of the stress response and studies were conducted to evaluate the possible interactive mechanisms in the adaptogenic effects of some herbal agents. The role of CNS-neuroendocrine-immune interactions during the adaptogenic effects of agents like *Ocimum sanctum* (Tulasi, OS), *Azadirachta indica* (Neem, AI) and *Withania somnifera* (Ashwagandha, WS), used in traditional medicine, were investigated in experimental animals. Restraint Stress (RS) was used as the experimental stressor, and the effects of RS and their modulation by OS, AI and WS extracts were assessed in albino rats. RS suppressed neurobehavioral (elevated plus maze test), endocrinal (plasma corticosterone) and immune (humoral and cell mediated) responses – effects that were differentially reversed by OS, AI and WS pre-treatments. Herb-drug interaction studies showed that endogenous neuromodulatory substances could be involved in the observed adaptogenic effects. Such interactive studies are of great significance for the convergence of traditional and modern medicinal concepts and for the development of newer, more effective and safer herbal agents for the treatment of stress related disorders.

Biography

Arunabha Ray holds an MD and a PhD and is the Chair, Department of Pharmacology at the Vallabhbhai Patel Chest Institute, Faculty of Medicine, University of Delhi. He has more than 36 years teaching and research experience in basic and clinical pharmacology and toxicology and has been the recipient of several awards and honors for research excellence. He has more than 150 research publications, is Author of several text and reference book chapters, Editor of 04 books in his areas of expertise, and Author of a textbook in pharmacology.

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