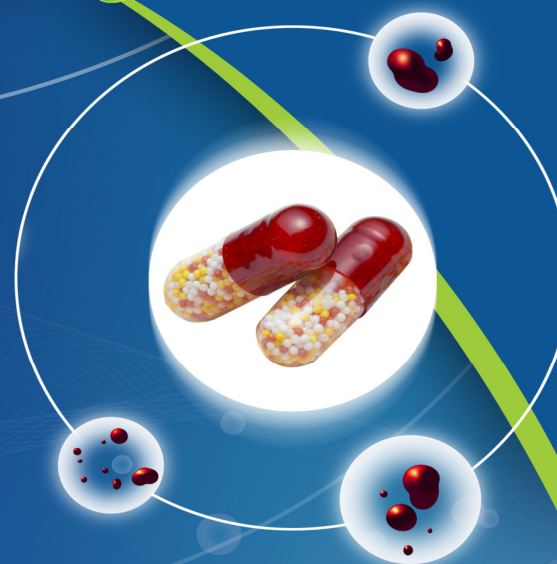




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Review Article

THEORETICAL ATTEMPT TO DESIGN AYURVEDICOPHORIC MODELS OF ANTIDEPRESSANTS

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ABSTRACT

Health is a state of complete physical, mental, and social well-being and not merely the absence of disease. Recently quality oriented life improving drugs have attained the status for enhancing the life expectancy and feeling of well-being. Antidepressants are life-style drug molecules which contribute to prosperity of health. They have not only a therapeutic impact but also a social one. The holistic principles of ayurvedic therapeutics potentiated the promise of life-style drugs in the recent years for improving the quality of life.

Keywords: Antidepressants, Antidepressive Ayurvedicophores, Ayurvedic plants.

INTRODUCTION

Depression

It is a common and mood related disorder. Medically depression is a consistent state of depressed feeling lasting more than two weeks. Behaviorally depression and anxiety are inter-related⁴. The clinical depression needs the professional treatments, whereas sub- clinical depression can be treated by self medications [1-2]. Depression is of two types.

Unipolar depression. Bipolar depression

Unipolar:-

- Eating too much and too little.
- Lack of energy and constant fatigue
- Difficulties in concentrating and memory impairment
- Loss of interest in daily activity and Libido
- Feelings of guilt, worthlessness and hopelessness

Bipolar:-

- Increased energy.
- Inappropriate elation.
- Loud, fast and incoherent speech.
- Grandiosity.

The losses of self esteem, memory, hygienic , pleasurable activity ,and alcohol / drug abuse, drop in academic performance, and neglect of personal appearance are chief environmental factors which contribute to depression. The

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biological factors involve the biochemical imbalances, hormonal and nutritional deficiencies. Depression is not a weakness of mind, will or spirit, but lack of hope and motivation. The psychosocial turmoils render confusion to depression. The clinical depression involves genes, and biochemical imbalances [3-4].

Antidepressants:- They are mood elevators. Synthetic and modern antidepressants, belonging to diverse chemical structures and modes of action are carriers of undesirable side effects, due to multiple receptor activations and interactions [5-7]. Antidepressive, nutraceuticals as well as terrestrial and marine natural products have become an alternatives for depression and mood elevation therapies [8]. Antidepressive nutraceuticals (L-tyrosine, L-phenylalanine, omega fatty acids, water soluble energy releasing vitamins-B-complex) behave as precursors of neurotransmitters or replenishers and improve bioenergetic and bio-rhythm of human body's biological clock. They are non prescription pharmaceuticals and considered as life style modifiers, being dietary supplements [9-10].

The terrestrial and marine types of antidepressant natural products are used in herbal/ayurvedic formulations. Withanolide-A (Ashwagandha), Hyperforin, Adhyperforin (Basant) Rhaznilam (Rhazya Stricta) Calebin-A (Haridra) Luteolin (Lavender oil) Santalol (Sandal wood) Ginkgolide B (Ginkgo biloba) and Protopanaxadiol (Ginseng root) are noticeable chemical structures of antidepressant plants [11-12]. The modern research on the marine natural products and nutraceuticals yielded few antidepressive chemical structures. Marine phytoplankton, Frankincense, and Aplysinsin are the most promising antidepressive structures of futuristic therapy [13].

Antidepressive Ayurvedicophores:-

Ayurvedic therapeutics implies holistic principle for antidepressive ayurvedicophores which should delineate the biological preferences for balancing the energies of vata and pitta [14]. The physiological state of vata controls the force of nerves (Samana) and pitta has regulatory function of nervous system's metabolic energy. Ayurvedic antidepressant medication exerts composite action of natural herbs for enhancing memory, concentration mental energy, mental assimilation, perceptions and mood elevation for the exploratory optimism by balancing the aggravated symptoms of vata and pitta [15]. It provides positive orientation of thoughts and creative intelligence. The biological preference can be interpreted as ayurvedic agonism. It is a pluralistic synergism of herbal bioactions. It is the foremost therapeutical objective of ayurvedicophore [16].

Ayurvedicophore exhibits ayurvedic agonism, derived from the bioactions of herbal chemicals. It differs from the pharmacophore in the following respects.

- Lack receptor specificity
- Action is non-specific
- Structure – activity relationships are not considered
- It does not have chemical priorities or preferences.
- It is a pluralistic synergism of herbal bioactions.

All these criteria qualify the therapeutical objectives of ayurvedicophore. The biological priorities to design ayurvedicophore involve the selection of bioactions with therapeutical synergism [13]. We selected the bioactions of ayurvedic plants for antidepressive ayurvedicophore designing (Table-1)

The modern scientific validations have confirmed the authenticity of the selected

bioactions. Antidepressive ayurvedicophore should be therapeutically hybrid of anti-anxiety, anti-stress (adaptogenic), hepatoprotective, and anabolic (testosterone booster) activities.

Medically this ayurvedicophoric model may be useful in depressions, caused by hormone deficiency, liver ailments, stress and anxiety. This polypharmacological actions might support the ayurvedic agonism [17].

SUMMARY AND CONCLUSION

The pharmacophoric structure of terrestrial antidepressant natural products has greater degree of structural rigidity, therefore it is

considered as rigid type of pharmacophore, made of H-bond accepters, hydrophobic pockets. The antidepressants of natural origin offered many structural opportunities for drug- extension or increase in binding sites.

Antidepressant ayurvedicophore is defined as therapeutical hybrid of anti-anxiety, anti-stress, hepatoprotective and anabolic activities. The polypharmacological actions might support ayurvedic agonism. The theoretical design of pharmacophore and ayurvedicophore helped to propose the topographical script for antidepressant natural product is composed of H- accepters and lipophilic sites.

TABLE-1 Selected Bioactions of Ayurvedic Plants.

Ayurvedic name of Plants	Bioactions on the CNS
1. Ashwagandha	Antidepressant, Restorative, Anabolic, Adaptogenic, Neuroprotective, Chemopreventive.
2. Brahmi	Antidepressant, Memory enhancer, Mild tranquilizer, Hepatoprotective, Adaptogenic, Anti-stress.
3. Bassant	Antidepressant, Adaptogenic.
4. Rhazya Stricta	Antidepressant.
5. Haridraa	Antidepressant, Hepatoprotective.
6. Ginseng	Antistress, Androgenic, Antidepressant.

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