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A REVIEW ON EVIDENCES OF HERBAL PLANT BRAMHI

Sasankar Yash, Rameshwar Kharde, Abhishek Sahadev, Inamdar Simran
HSBPVT GOI Faculty of Pharmacy, Kashti.
Corresponding author Mail ID: sasankaryash710@gmail.com

ABSTRACT:

With advances in neurobiology, the convolution related to memory is being resolved. The concurrent hypotheses hold that synaptic plasticity serves as a foundation for memory creation, stabilization, and reinforcement. the symptoms of Alzheimer's (AD), which is typically marked by memory issues, links between Neural networks deteriorate as a result of brain cell loss or attenuation. There have been numerous attempts to identify new treatments for memory problems with There is a growing focus on and investment in herbal medicines. several herbal plants, and Extracts have demonstrated positive outcomes in tests for antiamnesic properties. One such widely used herbal remedy that has been used for a long time in both Indian and Chinese medicine to treat a variety of ailments is Brahmi (Bacopa monniera). Previous studies have demonstrated that Brahmi has a wide range of pharmacological actions, including the ability to improve memory in the treatment of schizophrenia and Alzheimer's disease, showing anticonvulsant, anti-stroke, and anti-parkinsonian properties. The current evaluation explains Brahmi's chemical components and in vivo and in vitro research according to the pharmacological effects it has. Brahmi's effectiveness in treating There has been enough research on numerous illnesses in recent years, and it is now time to launch several clinical studies.

Keywords: Brahmi, pharmacological effects, anti-Parkinson, anti-convulsant, anti-depressant, clinical trials.

INTRODUCTON:

Brahmi's (Bacopa monniera Linn.) relevance for enhancing memory and learning abilities was first documented in 1982. Since then, numerous investigations have been carried out on animals to ascertain the various characteristics the medicinal herb presented. Possibilities of Brahmi Several expanding studies have also examined the effectiveness of protecting neuronal structure and/or function studies. The well-known Ayurvedic herb Brahmi is making a comeback as a treatment for treatment for impairments of memory. Both in Indian and English, its medical efficacy is stated.as traditional Chinese literature. The isolation of several chemical substances from Bacoside-A and bacoside-B are present in the active components of the medicinal plant known as Brahmi. A variety alkaloid, glycosides, flavonoids, saponins, and other phytochemicals. Research thus far has shown that Brahmi has a wide range of pharmacological effects. including the ability to improve memory in the treatment of Alzheimer's disease and in addition to having potential to prevent Parkinson's disease, stroke, and convulsions, schizophrenia. The chemical components of Brahmi are discussed in this article, along with in vitro and vivo research based on its pharmacological and molecular effects.

BRAHMI'S CHEMICAL COMPONENTS

Typical chemical constituents of bacopa monniera include substances like bacosides, which are triterpenoid saponins of the dammarane class, which include jujubogenin or pseudo-jujubogenin moieties units of aglycone. 12 analogues are based on the structural similarity have been clarified from the family of bacosides. In a distinct class of saponins in the recent past called bacopasides I–XII have been noted as being a crucial component of the extract of herbs. Other than hersaponin, Monnierasides I–III, apigenin, D-mannitol, plantainoside B, and nicotine; the alkaloids brahmine, herpestine, and cucurbitacin have also been categorised in terms of the chemical components of Banisteri fern The most researched and effective component of bacopa, which also contains bacoside A3, bacopasaponin C, bacopaside II, and bacopaside X, is called bacoside A. HPLC has been used by numerous research teams to separate the components of Brahmi. To separate different chemical components, a number of mobile phase systems have been employed. Methanol and water, which are both components of Brahmi mixture pH 2.3.

ACTIVE ELEMENTS

Triterpenoid saponins, which are contained in the plant extract, are thought to be the mechanism by which Bacopa monniera exerts its medicinal effects. The triterpenoid saponins of prime are called bacosides. There is evidence that they improve nerve impulse transmission. The bacosides encourage the restoration of broken through increasing neuronal production and kinase activity. Additionally, the bacosides support the recovery of synaptic activity. This finally results in the transmission of nerve impulses. The transmission of nerve impulses is important plays a crucial part in fostering healthy cognitive processes like attention, span, focus, learning, and memory. Bacopa contains active ingredients including bacosides, which according to studies may alter the synthesis and Bacopa increases the availability of the neurotransmitter serotonin which maintains the equilibrium of neurotransmitters.

PHARMACOLOGICAL EFFECTS

Memory Booster in Alzheimer's Disease and Schizophrenia Brahmi (Bacopa monniera) has been used in the form of memory enhancer for many years. The accreditation of the traditional assertion of Brahmi was initiated by investigating the effect of an alcoholic extract of this herb on acquisition, consolidation and retention in different conditioning schedules in rats. These included shock driven brightness-discrimination response, continuous avoidance and active conditioned response.

It was found that motor skills, acquisition and consolidation were improved and newly acquired behavior was retained for a long period of time in all the three learning responses by the introduction of the CDRI-08 (Keen Mind; 40 mg/kg, po. ×3d) in mice. To discern the efficacy of Brahmi in causing the reversal of amnesia, several behavioral studies have been conducted by inducing amnesic agents in animals. Some of the potential amnesic agents including benzodiazepines, scopolamine, quinoline derivatives and phenytoin cause amnesia by interrupting long-term potentiation (LTP). The process of LTP is probably interfered by the involvement of gamma-aminobutyric acid-benzodiazepine pathway. Saraf et al. demonstrated that amnesia induced by diazepam (1.75 mg/kg) was significantly reversed by Brahmi (120 mg/kg) which was provided orally in mice. Subsequently, the same group later examined the influence exerted by Brahmi on the downstream signaling molecules related to LTP in amnesic mice, which were developed by diazepam. The molecular tests revealed that diazepam upregulated the gene expression of inducible nitric oxide synthase (iNOS), mitogen activated protein kinase (MAP kinase) and phosphorylated CREB (pCREB) whereas reduced the expression levels of cAMP response element binding.

Antidepressant Effects Brahmi appears to play a plethora of functions in the central nervous system. In addition to its diverse role in treating the diseased brain, the herb shows anti-depressant property. When mice supplemented with CDRI-08 (Keen Mind) were subjected to tail suspension test (TST) and forced swimming (FST), the herbal drug exerted antidepressant activity. The drugs were given orally for 5 days that significantly minimized the immobility time span both in FST and TST. The antidepressant activity of Brahmi was believed to have occurred by some of its components like Bacosides A and B bacopasaponin C, bacopasides I and II and its plant extract. However, bacopaside VII, a constituent of Brahmi, did not reveal any antidepressant activity when analyzed using tail suspension and forced swimming tests. Banerjee et al. investigated whether treatment with Brahmi produces any antidepressant activity in rats which were made to undergo chronic unpredictable stress-based depression. The group used some behavioral tests like sucrose consumption test, shuttle box escape test and open field test to validate this hypothesis. Stress was induced in rats for a period of 4 weeks. This resulted in decreased consumption of sucrose, locomotor activity and escape latency in the animals. In addition, both mRNA and protein content of brain-derived neurotrophic factor (BDNF) showed downregulated expression in both the frontal cortex and hippocampus in CUS treated rats. Supplementation with Brahmi (80–120 mg/kg) greatly suppressed the behavioral changes and attenuated BDNF content to normal in the frontal cortex and hippocampus areas of the rat brain confirming its antidepressant.

CONCLUSION

Bramhi is an anti-inflammatory and shows the different pharmacological effects.

REFERENCES

1. Anand, A., Saraf, M. K., and Prabhakar, S. (2010). Antiamnesic effect of b.Monniera on l-na induced amnesia involves calmodulin. Neurochem. Res. 35,1172–1181. doi: 10.1007/s11064-010-0171-x 2. Azad, A., Awang, M., and Rahman, M. (2012). Phytochemical and microbiological evaluation of a local medicinal plant bacopa monnieri (l.) penn. Int. J. Curr. Pharm. Rev. Res. 3, 66–78. 3. Banerjee, R., Hazra, S., Ghosh, A. K., and Mondal, A. C. (2014). Chronic administration of bacopa monniera increases bdnf protein and mrna expressions: a study in chronic unpredictable stress induced animal model of depression. Psychiatry Invest. 11, 297–306. 4. Basu, N., Rastogi, R., and Dhar, M. L. (1967). Chemical examination of bacopa mienniera wettst: part iii-bacoside b. Ind. J. Chem. 5, 84–95. 5. Benson, S., Downey, L. A., Stough, C., Wetherell, M., Zangara, A., and Scholey, A. (2014). An acute, double−blind, placebo−controlled cross−over study of 320 mg and 640 mg doses of bacopa monnieri (cdri 08) on multitasking stress reactivity and mood. Phytother. Res. 28, 551–559. 6. Bhattacharya, S. K., and Ghosal, S. (1998). Anxiolytic activity of a standardized extract of bacopa monniera: an experimental study. Phytomedicine 5, 77–82. 7. Bhattacharya, S. K., Kumar, A., and Ghosal, S. (2000). “Effect of bacopa monniera on animal models of Alzheimer’s disease and perturbed central cholinergic markers of cognition in rats,” in Molecular Aspects of Asian Medicines, ed D. Siva Sanka (New York, NY: PJD), 21–32.

8. Calabrese, C., Gregory, W. L., Leo, M., Kraemer, D., Bone, K., and Oken, B. (2008). Effects of a standardized bacopa monnieri extract on cognitive performance, anxiety, and depression in the elderly: a randomized, doubleblind, placebo-controlled trial. J. Alter. Complement. Med. 14, 707–713.

9. Channa, S., Dar, A., Yaqoob, M., Anjum, S., and Sultani, Z. (2003). Broncho vasodilatory activity of fractions and pure constituents isolated from bacopa monniera. J. Ethnopharmacol. 86, 27–35.