Add-on effect of Brahmi in the management of schizophrenia

Sukanto Sarkar, Biswa Ranjan Mishra\textsuperscript{1}, Samir Kumar Praharaj\textsuperscript{2}, S. Haque Nizamie\textsuperscript{3}

Department of Psychiatry, Mahatma Gandhi Medical College and Research Institute, Puduchery, \textsuperscript{1}M.K.C.G. Medical College, Berhampur, Orissa, \textsuperscript{2}Kasturba Medical College, Manipal, Karnataka, \textsuperscript{3}Central Institute of Psychiatry, Ranchi, Jharkhand, India

ABSTRACT

Brahmi (Bacopa monnieri), an Ayurvedic herb has primarily been used to enhance cognitive ability, memory and learning skills. We present a case study of schizophrenia in which add-on Brahmi extracts 500 mg/day for a period of one month resulted in reduction in psychopathology without any treatment-emergent adverse effect. Although preliminary, our case study suggests therapeutic efficacy of add-on Brahmi in schizophrenia, thus opening up a new dimension of its role in alternative medicines.

Key words: Bacopa monnieri, Brahmi, schizophrenia

INTRODUCTION

Ayurvedic medicine differs from the orthodox western medicine in terms of attributes and applications and may be used to complement, support, or replace it.\textsuperscript{[1]} Brahmi (Bacopa monnieri, family: Scrophulariaceae) has primarily been used to enhance cognitive ability, memory and learning skills.\textsuperscript{[2-4]} This Ayurvedic herb has found its use in diverse medical conditions like asthma, bronchitis, dyspepsia, urinary disorders and also a few other diseases.\textsuperscript{[4]} In psychiatry, Brahmi has found its use in the treatment of agitation, anxiety and depression.\textsuperscript{[5]} While the exact mechanism of action of Brahmi is not clear, few pre-clinical studies have reported its cholinergic, anti-oxidant and adaptogenic effect on central nervous system.\textsuperscript{[6]} We present a case study suggesting the therapeutic efficacy of add-on Brahmi in schizophrenia, thus opening up a new dimension of its role in alternative medicines.

CASE REPORT

Mr. A, a 34-year-old single graduate male, presented with suspiciousness and fearfulness, wandering behavior, muttering to self, unprovoked aggression and disorganized behavior for the past 15 years. Mental status examination revealed delusion of persecution and grandiosity, third-person auditory hallucinations, irritable effect and grade I insight. He was diagnosed as having paranoid schizophrenia according to ICD-10 diagnostic criteria for research. On positive and negative syndrome scale (PANSS), the total score was 108 (positive 59, negative 21 and general psychopathology 28) and on brief psychiatric rating scale (BPRS) the total score was 48. He was started on olanzapine tablets 10 mg/day, which was increased gradually up to 20 mg/day over a period of two weeks. Although there was initial improvement in psychopathology, it did not sustain after three-week trial on the same dose of olanzapine. His rating on PANSS was 92 (positive 43, negative 21 and general psychopathology 28) and on BPRS was 38. Subsequently, after obtaining written informed consent, after five weeks on olanzapine tablets, he was given an add-on trial of Ayurvedic drug Brahmi (each tablet containing 250 mg of Brahmi extract, a pure herb extract by Himalaya Herbal Healthcare) at a dose of two tablets, a day for a period of one month, as prescribed by a qualified Ayurvedic physician on the basis of research reports and not on Ayurvedic parameters. Weekly rating was done for four weeks on PANSS, BPRS and Udvalg for Kliniske Undersogelser (UKU) side effect rating scale. The dose of olanzapine was kept constant, and no other drugs were added during this period. At the end of four weeks there was a reduction in psychotic symptoms and
on PANSS, his score was 67 (positive 29, negative 18 and general psychopathology 20) and BPRS totals score was 27. The changes in psychopathology scores over time are summarized in Figure 1. There were no side effects as assessed on the UKU scale.

**DISCUSSION**

Despite treatment advances over the past decades, schizophrenia still remains a challenge for the mental health professionals and produces marked functional impairment in a substantial proportion of patients. Researchers have found out novel agents like metabotropic glutamate agonists, alpha nicotinic receptor agonists, muscarinic agonists, etc. with the hope to reduce the magnitude of morbidity across various dimensions of schizophrenia. The advent of alternative medicines has opened up new avenues for research and treatment in schizophrenia. In our patient, after a five-week trial of olanzapine 20 mg/day, the substantial improvement in positive symptoms on addition of Brahmi, an Ayurvedic herb, suggests its potential therapeutic effect in schizophrenia. There was initial improvement in psychopathology with olanzapine 20 mg/day, which reached a plateau after two weeks. The second peak in positive symptom improvement after five weeks could also be due to the delayed effects of olanzapine.

The exact mechanism through which Brahmi produces improvement in positive symptoms of schizophrenia is not known. Animal researchers have demonstrated the anti-oxidant properties of Bacopa extracts in the brain, which could potentially lead to its positive effect on mental function. Bacopa monnieri has been reported to repair damaged neurons by enhancing kinase activity, restoration of synaptic activity, ultimately enhancing nerve impulse transmission in brain. The nootropic properties of Brahmi have been reported to be possibly mediated by its constituent saponins, bacosides A and B through glutaminergic mechanism. There is lack of literature to support the therapeutic effect of Brahmi in schizophrenia. A small pilot study by Ramu et al. showed improvement in positive and negative symptoms of chronic unmada (schizophrenia) in 6 out of 10 patients with Brahmyadiyoga, an herbal compound which contains Brahmi (Centella asiatica), along with other ayurvedic drugs. However, Brahmyadiyoga also contains Sarpagandha (Rauwolfia serpentina), which is a known antipsychotic. The improvement produced by Brahmi in positive symptoms and general psychopathology in schizophrenia could possibly be mediated through dopaminergic mechanism and its neurotransmission enhancing properties. Further researches are required to establish the therapeutic effects of Brahmi in various dimensions of schizophrenia and also explore the neurophysiological and neurochemical mechanisms behind the same.

In Ayurveda, psychosis (unmada) including schizophrenia has been conceptualized as a disorder of mind, caused owing to the imbalance or anomalies of the tridoshas (vata, pitta and kapha). Based on the vitiation of the dosha, three distinct types of unmada as vataja, pittaja and kaphaja have been described in the classics. Brahmi is a rejuvenating and nervine (nerve tonic, which quiets nervous excitement akin to sedative property) herb. The Ayurvedic attributes of Brahmi include tikta, kasaya rasa (~ sharp, astringent taste), sheeta virya (~ cold active principle), madhur vipaka (~ effect observed after digestion) and its therapeutic effect (karma) has been described as tridoshabhava (suppressing excesses of all the three doshas), especially vataghna, pittaghna (vata and pitta abating) attributes.

In summary, add-on Brahmi to olanzapine in a case of paranoid schizophrenia resulted in improvement in psychopathology as evidenced by reduction in PANSS and BPRS scores, without any treatment emergent adverse effect. Short duration of the study is a limitation of the case report. In addition, studies for toxicity and drug interaction are essential. The efficacy of add-on Brahmi for paranoid schizophrenia needs to be examined in placebo-controlled randomized controlled trials.

**REFERENCES**

1. Fava M. Using complementary and alternative medicines for depression. J Clin Psychiatry 2010;71:e24.
2. Agrawal A, Pandey MN, Dubey GP. Management of mental deficiency by an indigenous drug, Brahmi (Bacopa monnieri). Pharmacopsychoeconomia 1993;6:1-5.
3. Stough C, Lloyd J, Clarke J, Downey LA, Hutchison CW, Rodgers T, et al. The chronic effects of an extract of Bacopa monnieri (Brahmi) on cognitive function in healthy human subjects. Psychopharmacology (Berl) 2001;156:481-4.
4. Andrade C, Chandra JS. Anti-amnestic properties of Brahmi and Mandookaparni in a rat model. Indian J Psychiatry 2006;48:232-7.

5. Calabrese C, Gregory WL, Leo M, Kraemer D, Bone K, Oken B. Effects of a standardized Bacopa monnieri extract on cognitive performance, anxiety, and depression in the elderly: A randomized, double-blind, placebo-controlled trial. J Altern Complement Med 2008;14:707-13.

6. Morgan A, Stevens J. Does Bacopa monnieri improve memory performance in older persons? Results of a randomized, placebo-controlled, double-blind trial. J Altern Complement Med 2010;16:753-9.

7. Kane JM, Correll CU. Past and present progress in the pharmacologic treatment of schizophrenia. J Clin Psychiatry 2010;71:1115-24.

8. Ramu MG, Senapati HM, Janakiramaiah N, Shankara MR, Chaturvedi DD, Murthy NS. A pilot study of role of brahmyadiyoga in chronic unmade (schizophrenia). Anc Sci Life 1983;2:205-7.

9. Sen G, Bose K. Rauwolfia serpentina, a new Indian drug for insanity and hypertension. Indian Medical World 1931;21:194-201.

10. Klerman GL. Pharmacotherapy of schizophrenia. Annu Rev Med 1974;25:199-217.

11. Caldecott T. Ayurveda: The divine science of life. Philadelphia: Mosby Elsevier; 2006.

12. Balodhi JP, Chowdhary JR. Psychiatric concepts in Atharva Veda: A review. Indian J Psychiatry 1986;28:63-8.

13. Weiss MG, Desai A, Jadhav S, Gupta L, Channabasavanna SM, Doongaji DR, et al. Humoral concepts of mental illness in India. Soc Sci Med 1988;27:471-7.

How to cite this article: Sarkar S, Mishra BR, Praharaj SK, Nizamie SH. Add-on effect of Brahmi in the management of schizophrenia. J Ayurveda Integr Med 2012;3:223-5.

Source of Support: Nil, Conflict of Interest: None declared.

New features on the journal’s website

Optimized content for mobile and hand-held devices
HTML pages have been optimized of mobile and other hand-held devices (such as iPad, Kindle, iPod) for faster browsing speed.
Click on [Mobile Full text] from Table of Contents page.
This is simple HTML version for faster download on mobiles (if viewed on desktop, it will be automatically redirected to full HTML version)

E-Pub for hand-held devices
EPUB is an open e-book standard recommended by The International Digital Publishing Forum which is designed for reflowable content i.e. the text display can be optimized for a particular display device.
Click on [EPub] from Table of Contents page.
There are various e-Pub readers such as for Windows: Digital Editions, OS X: Calibre/Bookworm, iPhone/iPod Touch/iPad: Stanza, and Linux: Calibre/Bookworm.

E-Book for desktop
One can also see the entire issue as printed here in a ‘flip book’ version on desktops.
Links are available from Current Issue as well as Archives pages.
Click on View as eBook