IAMJ

INTERNATIONAL
AYURVEDIC
MEDICAL JOURNAL

Review Article ISSN: 2320-5091 Impact Factor: 6.719

THE EFFECT OF DRUG BRAHMI IN DEMENTIA/SMRUTHI BRAMSHA

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https://doi.org/10.46607/iamj10022022

(Published Online: February 2022)

Article Received: 10/01//2022 - **Peer Reviewed:** 18/01/2022 - **Accepted for Publication:** 19/01/2022

ABSTRACT

Mana is an essential part of life. The main three entities of *mana are Dhi*, *Dhriti* and *Smruti*. *Smruti* is defined as to remember, recollect, be mindful. *Smruti* plays a major role in the perception of buddhi. Impairment of cognitive functions leads to *Smruti bhramsha*. Dementia is a disorder that comprises of impairment of cognitive functions such as intellectual, cortical functions, and executive functions like memory, language, orientation etc. In *Ayurveda*, *Medhya rasayana* is believed to be more advantageous for the betterment of intellectual capacity and enhancing the memory by its *prabhava*, one among them is *Brahmi* which helps to boost nourishment, health, memory, intellect, and longevity. It is beneficial in the neurological and psychiatric disorders associated with loss of memory, impairment of cognitive deficits and impaired mental functions. *Rasayana* drugs act on the hypothalamus pituitary adrenal axis (HPA axis) and normalize the secretion of neurodermatitis and improve the mental condition.

Keywords: *Smruti bramsha*, Dementia, *Medhya Rasayana*, *Brahmi*

INTRODUCTION

Mana (mind) is mainly seated in *Shiras*, *hrudaya* and *sarva sharira*. *Shiras* is considered as *Uttamanga*, one among the *Trimarma* and *dashapranayatana*[1-2]. It is the site of major cognitive and physical activities of the brain. Injury to *Shiro marma* by *vatadi dosha* due to external and internal factors is considered as *shiro marma abhighata*[3]. Dementia is not a disease. Dementia is an encompassing syndromic term for a

decline in cognitive abilities of sufficient severity to interfere with function during daily activities (i.e., shopping, paying bills, cooking, driving, etc.). Dementia is a syndrome- usually of a chronic or progressive nature- in which there is deterioration in cognitive function (i.e the ability to process thought) beyond what might be expected from normal ageing[4]. *Brahmi* is one of the gifted drugs in our classics which is having a tremendous effect in improving intelligence and *Smruti*. Due to its *Prabhava* i.e *medya*, it is considered the best brain tonic.

MATERIALS AND METHODOLOGY:

As *Shiras* is a manah sthana, injury to *Shiras*, causing derangement of *Smruti* that leads to *Smruti bramsha*[5]. *Shruthi* or *samorana* is defined as to remember, recollect, bear in mind, call to mind[6]. Eight factors that are responsible for recollection of the things are *Namita Grahana* (perception of cause), *Rupa Grahana* (perception of the form), *Sadrusha* (similarity), *Sa viparyaya* (contrariety), *Satvanubandha* (connection with the mind), *Abhyasa* (Regular practice), *Sajnanayoga* (Attainment of knowledge), *Punaha shrutha*[7] (Repeated and frequent hearing). In our classics, we get a direct reference about *Smruti brmasha* in only one context i.e in *charaka shareera* where its *lakshana* and *dosa* vitiation has been explained[8]. But we can also consider *samanya nidana* for *smrithi bramsha*. *Prajnaparada* is one such causative factor where there will be *vibrama* (derangement) of *dhee* (perception), *dhriti* (retention) and *smruthi*[9] (memory). On *vibrama* of *Smruti* leads to derangement of memory or loss of memory. *Prajnaparada* is occurred due to the vitiation of *sarva dosha* by *ayoga* (scanty), *atiyoga* (abundant) and *mithyayoga* (wrong way) of *kaya* (body), *vak* (speech), and *manas*[10] (mind). Other factors which affect the *Smruti* indirectly are *asatmya indriya sanyoga* and *parinama*. *Asatmya indriya sanyoga* means improper usage of *indriya* i.e., in the process of perception of knowledge through *indriya* (sense organs) and *indriya sannikarsha* (contact between sense organs and object of perception). *Parinama*, the time factor is also the main entity where the body undergoes the process of ageing as time passes[11]. *Kalasya parinamena jaramrityunimittajaha*- the old age, death and diseases get manifest because of the influence of *kala* which is also responsible for the reduction in *smruti* causing *Smruti nasha*[12]. *Jar*a is of 2 types *kalaja* and *akalaja*[13]. *Kalaja*, as time passes or due to ageing, the symptoms are developed. Whereas in *akalaja*, the early development of the symptoms is related to ageing. *Ahara, vihara and manasika* factors are also contributing to the derangement of *Smruti*.

Dementia affects other mental faculties such as language, visuospatial ability, calculation, judgement and problem solving[14]. Consciousness is not affected but there is impairment of cognitive function which is commonly accompanied and occasionally preceded by deterioration in emotional control, social behaviour or motivation (WHO 2017). There are different types of dementia, most seen in Alzheimer's disease. Other types are vascular dementia, mixed dementia, lewy body dementia, frontotemporal dementia, Parkinson's dementia and other[15].

Brahmi is a perennial creeping herb that belongs to the Plantaginaceae family. Botanical name-Bacopa monnieri. Many *acharyas* in our classics have mentioned the *Brahmi* drug and its properties, uses, formulations etc. In *rasayana adhyaya* explained by *Acharya Charaka*, here *brahmi* is included under *medhya dravyas*[16]. It is also one of the ingredients of *indrayokta rasayana* which helps to enhance *dheerga ayu* (long life), *taruna avastha* (young forever), *uttama swara* (good voice), *uttama varna* (good complexion), *upachaya* (good nourishment), *medha* (good intellect), *sampad Smruti* (memory enhancer), *uttama bala* (good strength)[17]. In *apasmara* chapter, *brahmi grihta* has been explained in which *Smruti nasha* is one of the clinical features of *apasmara* and *Brahmi* acts as *Smruti vardhaka*[18]. Other *Acharyas* like *Sushrutha, Vagbhata* mentioned *Brahmi yoga, Brahmi gritha.* Intake of *Brahmi yoga* for seven days will have a marvellous result in the increase in *medha* (intellectual capacity) [19]. *Brahmi* is indicated to both psychiatric as well as organic diseases. Most effective in *manasika rogas.*

PATHOGENESIS:

Due to the *Prajnaparada, asatmya indriya, jara, abhigata, ahara-vihara-manasika* factor, there is vitiation of *tridosha, rajas* and *tamas (manasika dosa*s) which leads to vitiation of *manovaha srotas* causing *Smruti bramsha.*

All types of dementia have similar clinical features, but the progression of the disease is different from each other.

1. **Alzheimer's disease:**

It is mostly seen among the elderly population. The brain develops tangles and plaques. Plaques contain deposits of a protein fragment called beta-amyloid and are known as A-beta plaques, tangles are twisted fibres of another protein called tau. These tangles and plaques release chemicals that are neurotoxic (damaging nerve cells). These changes kill nerve cells, affect their ability to function and affect important chemicals in the brain known as neurotransmitters. These changes affect a person's ability to learn and to remember.

2. **Vascular dementia:**

Stroke is the second leading cause of dementia worldwide. The Dementia associated with the cerebrovascular disease can be divided into two categories: multi-infarct dementia and diffuse white matter disease. Vascular dementia is the occurrence of multiple cerebral infarctions that can lead to a progressive disruption of brain function.

3. Dementia with lewy body disease (DLB):

Lewy bodies are tiny, round deposits of protein found in nerve cells. They disrupt normal brain function interrupting the action of chemical messengers, including acetylcholine and dopamine.

4. Frontotemporal dementia:

Usually occurs in middle age. Frontotemporal dementia is a rare condition. It is also called pick's disease or frontal lobe dementia. The frontal lobes of the brain manage behaviour, problem-solving, planning and the control of emotions. The person's character and social behaviour and language skills change due to degeneration of the frontal and temporal lobes of the brain[20].

MODE OF ACTION:

The *Brahmi* has a typical chemical composition, and it consists of numerous chemical constituents they are Dammarane-type triterpenoid saponins called bacosides. Apart from these other chemical constituents are hersaponin, apigenin, D-maanitol, monnierasides, plantainoside B, cucurbitacin, alkaloids brahmine, herpestine, nicotine. But mainly concentrated on Bacosides which is triterpenoid sapnonins. Many research works done on this chemical constituent. They enhance nerve impulse transmission. Nerve impulse transmission plays a major role in cognitive functions like learning, memory, concentration etc. bacosides helps to promote the repair of damaged neurons by regulating the neuronal synthesis and kinase activity, this restores the synaptic activity which leads to nerve impulse transmission[21]. As it is the *rasayana*, it acts upon hypothalamus pituitary adrenal axis (HPA axis) and normalizes the secretion of neurotramitters[22]. Henceforth, it helps in maintaining balance in neurotransmitters. The *brahmi* are having *tiktha, Kashaya rasa, sheeta virya, madura vipaka, guna laghu,* and *prabhava medhya* explained in classics[23]. Due to its *sheeta virya, tikta guna* alleviates *vata, pitta doshas* and balances the *tridosha*. By its *prabhava* quality, there is an increase in intellectual capacity, learning, memory, concentration etc. It is useful in the nourishment of *majja dhatu* and helps in regain of memory[24].

CONCLUSION

Therefore, conceptually we can conclude that the *rasapanchakas* of *Brahmi* explained by our ancient *acharyas* helps in the tackling of vitiated *dosas* and eliminates the *dosas* from *manovaha srotas*, this helps in regaining *Smruti*. By the *rasayana* property, it does nourishment of *majja dhatu* leading to rejuvenation of brain cells. The antioxidant property of *Brahmi* can retard the ageing process by the elimination of free radicals from the body. The main chemical constituent of *Brahmi is* Bacosides can improve nerve impulse transmission, repair the damaged neurons, act on the HPA axis which nourishes the neurotransmitter hence

improving cognitive functions mainly the memory power of the brain.

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Source of Support: Nil
Conflict of Interest: None Declared

How to cite this URL: *Aishwarya Shetty et al: The Effect Of Drug Brahmi In Dementia/Smruthi Bramsha.* International Ayurvedic Medical Journal {online} 2022 {cited February 2022} Available from: http://www.iamj.in/posts/images/upload/430_433.pdf