The word Nootropic was derived from the Greek words νους nous, or ‘mind’ and trepein meaning "to bend/turn". Nootropics are referred to as smart drugs which enhances memory, cognition, intelligence and nerve functions. Nootropics are thought to work by altering the availability of the brain's supply of neurochemicals (neurotransmitters, enzymes, and hormones) by improving the brain’s oxygen supply or by stimulating nerve growth.

Ayurveda explains about some plants that are classified as Nootropics. They enhance mental abilities including memory, attention, concentration, and overall intelligence. There are mainly 4 medicinal plants mentioned specifically as “Medhya Rasayanas”. They are Mandukaparni (Centella asiatica), Yastimadhu (Glycirrhiza glabra), Guduchi (Tinospora cordifolia) and Shankhapushpi (Convolvulus pleuricaulis). In addition to these, there are other plants mentioned with the same qualities.

Mandukaparni (Centella asiatica)
Mandookaparni is a prostrate, perennial herb. It has a reputation for boosting cognitive function and for helping a variety of systemic illnesses. An old Sinhalese proverb states, "Two leaves a day keeps old age away." Centella asiatica is a very important herbal plant in food and beverages. This herb is also referred to as centella because it contains high amounts of asiaticosides and other tri-terpence.
Charaka has mentioned to use mandukaparni in the form of swarasa. In a study, it is proved that, leaf extract showed highest amount of asiaticosides than petioles and roots.

The micronutrients ie. asiaticosides, tri-terpence etc in the extract of mandukaparni is effective in enhancing memory and revitalization of the brain. (Singh et al., 2008). Some of these oral supplement of Centella extract had shown effective protection from cognitive deficiency and oxidative stress in rats which resulted in strong memory enhancement effect (Kumar and Gupta, 2002; Subathra et al., 2005). Its potential as a natural antioxidant extract reflects its capability to prevent oxidative damage, promoting activities in brain and having neuroprotective effect.

**Yastimadhu or Liquorice** (*Glycyrrhiza glabra*)

Yastimadhu (*Glycyrrhiza glabra*) is a hardy herb or under shrub belonging to Fabaceae family. In the traditional system of medicine, the roots and rhizomes of Yashtimadhu have been in clinical use for centuries. Charaka has suggested using yashtimadhu churna along with milk for medhya karma. It is probably because glabridin is an isoflavone that comes in hydrophobic extract of Glycyrrhiza glabra. In addition to this, being a phytoestrogen, its estrogen receptor binding function can be enhanced when consumed with milk. Phytoestrogens are known to arrest ageing and are neuroprotective. The glabridin from Yashtimadhu remarkably reduce the brain
cholinesterase activity. The neuroprotective effect of yashtimadhu root may be attributed to its antioxidant property as it possess many bio-amines and active ingredients. By the virtue of these, susceptible brain cells get exposed to less oxidative stress resulting in improved neuronal function with improvement in memory (intelligence).

**Guduchi (Tinospora cordifolia)**

It is a tropical climbing herb with a shrub like habit that can be commonly found all over tropical India. Tinospora cordifolia has been claimed to possess learning, memory enhancing, antioxidant, and anti-stress activity. Charaka has suggested the Juice of guduchi for the purpose of medya karma. The major constituent of guduchi is berberine which exhibits a peculiar action. It is isoquinolone alkaloid that has AChE (acetylcholinesterase inhibitory) action. Similarly it is MAO – inhibitory. Berberine helps prevent oxidation damage to bio molecules of brain, reduces peptides that interfere with memory function and lowers lipids that hamper cerebral blood flow. Thus, guduchi arrests neuro degeneration which is commonly present in Alzheimer’s disease. Berberine reduces A beta levels by modulating APP (amyloid precursors) processing in human neuroglioma cells without toxicity. Hence it used as medhya rasayana in degenerative disorders. Neuroprotective and ameliorative properties are due to their antioxidant and trace element contents. Tinospora cordifolia is known to be a rich source of trace elements (Zinc and Copper) which act as antioxidants and protects cells from damaging.

**Shankhapushpi(Convolvulus pleuricaulis )**

It is a perennial, hairy herb, found throughout India. Charaka has stated to take whole plant in the form of kalka for medhya effect. The answer to this is convolvine, present in the
whole plant. The extract of whole plant is proven to increase neuropeptide synthesis in brain protein. Important chemical principles are microphyllic acid, shankhapushpin, kaempferol-3-glucoside, dihydroxycinnamic acid and sitosterols. Neuroprotective and intellect promoting activity are implicated to free radical scavenging and antioxidant property. Herbalists believe that Shankhpushpi calms the nerves by regulating the body's production of stress hormones-adrenaline and cortisol

Other nootropic drugs

There are many other nootropic drugs which are as effective as or even more effectively used than the ones mentioned above. Some of the commonly used medya dravyas are:

Aindri or Brahmi (Bacopa monniera), Jatamansi (Nardostachys jatamansi), Jyotishmati (Celastrus panniculata), Kushmanda (Benincasa hispida), Vacha (Acorus calamus), Ashwagandha (Withania somnifera), Amalaki (Embelica officinalis), Badam (Prunus amygdalus), Guggulu (Commiphora whigetii), Bringaraj (Eclipta alba) Etc

Conclusion:

After reviewing the above medya dravyas, we can opine that this group shows psycho neuro pharmacological action. With low toxicity as attested by its long popular use as a natural product, medya drugs can be a potential application in many of the stress related psychological and psychosomatic disorders faced today.