COMPLEMENTARY AND ALTERNATIVE TRADITIONAL HERBAL MEDICINES FOR THE TREATMENT OF DEMENTIA: A REVIEW

Birendra Kumar*1, Chandraprakash Dwivedi 1, Prashant Lal Sivna2, Rajni Yadav1, S Prakash Rao 1, Laita Sahu 1, Himesh Nayak1, Mehendra Kumar Dewangan1, Durgeshnandani Sinha1

1Columbia Institute of Pharmacy, Tekari, Near Vidhansabha Raipur, C.G., 493111, India
2Department of Pharmaceutics IIT (BHU) Varanasi

ABSTRACT

Dementia is a term that describes the loss of cognitive function, usually because of damaged brain cells as it includes memory loss and at least one of the following, difficulty with language, impaired movement, and inability to plan and initiate appropriate behaviors socially or at work. Dementia is a progressive neurological disease of the brain. It demolishes the vital brain cells, causing trouble with memory, thinking, and behavior, brutal enough to affect work, lifelong hobbies, and social life. Since, the drugs and natural remedies has been prescribed to enhance the memory and protect the memory functioning in dementia people. The traditional herbal medicine, numerous plants have been used to treat age related cognitive disorders. The traditional herbal medicine, numerous plants has been used to treat age related cognitive disorders. Which are today popular all over the world due to their proven effective qualities, The drugs acting on the brain are called as nootropic drugs. The natural memory enhancing drugs, controlled the activity of acetyl cholinesterase (AChE). AChE modulates acetylcholine (ACh) to proper levels by degradation accordingly excessive AChE activity produce to constant Ach deficiency leads to memory and cognitive impairments. This natural agent inhibits the excessive AChE activity and protects the people suffering from dementia. The Indian medicinal plants are the most prolific sources for treatment of dementia. This review focuses on natural Indian medicinal plants used for treating and curing the dementia.

KEYWORDS: Dementia, Memory, Brain disorders, Enhancer, Medicinal plants.
INTRODUCTION
Dementia is a progressive neurological disease of the brain. It demolishes the vital brain cells, causing trouble with memory, thinking, and behavior, brutal enough to affect work, lifelong hobbies, and social life. Recognized factors in dementia include acetylcholine deficiency, free radicals, and inflammation of the brain tissue. Since, the drugs and natural remedies have been prescribed to enhance the memory and protect the memory functioning in dementia people. The traditional herbal medicine, numerous plants have been used to treat age related cognitive disorders. The use of herbs to treat ailments would later form a large part of Ayurveda. In the first millennium BCE, there emerges in post-Vedic India the traditional medicine system known as Ayurveda, meaning the "complete knowledge for long life".\textsuperscript{1} According to the compendium of Charaka, the Charakasamhita health and disease are not predetermined and life may be prolonged by human effort. The compendium of Suśruta, the Suśrutasamhitā defines the purpose of medicine to cure the diseases of the sick, protect the healthy, and to prolong life. Most remarkable is Sushruta's penchant for scientific classification His medical treatise consists of 184 chapters, 1,120 conditions are listed, including injuries and illnesses relating to ageing and mental illness. Dementia is a progressive neurological disease of the brain. It demolishes the vital brain cells, causing trouble with memory, thinking, and behavior, brutal enough to affect work, lifelong hobbies, and social life.\textsuperscript{2} Recognized factors in dementia include acetylcholine deficiency, free radicals, and inflammation of the brain tissue, It is a syndrome or set of symptoms and signs occur at the same time is due to a disease in the brain. It is progressive impairment of memory, thinking, and orientation, learning capacity, language and judgments. Dementia occur due to the cerebral ischemia, energy failure, and calcium overload, glutamate mediated excitotoxicity, oxidative stress and structural and functional changes.\textsuperscript{3}

The history of medicine in India can be traced to the remote past. The earliest mention of medicinal use of plants is found in the Rigveda, probably the oldest repositories of human knowledge written between 4500 and 1600 b.c. The Atharvaveda also contain prescriptions of herbs for various ailments. The use of herbs to treat ailments would later form a large part of Ayurveda. In the first millennium BCE, there emerges in post-Vedic India the traditional medicine system known as Ayurveda, meaning the "complete knowledge for long life". According to the compendium of Charaka, the Charakasamhitās, health and disease are not predetermined and life may be prolonged by human effort. The compendium of Suśruta, the Suśrutasamhita defines the purpose of medicine to cure the diseases of the sick, protect the
healthy, and to prolong life. Most remarkable is Sushruta's penchant for scientific classification: His medical treatise consists of 184 chapters, 1,120 conditions are listed, and including injuries and illnesses relating to ageing and mental illness. Herbal therapy may provide an alternative to treating some psychiatric conditions. According to the American Psychiatric Association, approximately 10-25% of women and 5-12% of men will suffer from depression at some point in their lives.[4] More than human are suffering from brain disorders including dementia. It is a syndrome or set of symptoms and signs occur at the same time is due to a disease in the brain. It is progressive impairment of memory, thinking, and orientation, learning capacity, language and judgments. Dementia occurs due to the cerebral ischemia, energy failure, and calcium overload, glutamate mediated exitotoxicity, oxidative stress and structural and functional changes. The herbs that promote intelligence and memory enhancing are called “Medhya”. Memory enhancer herbs enhance the memory and increase the blood circulation in the brain.[5] Like Ayurvedic formula consists of the juice of Centellaasiatica (Apiceae), the powder of Glycyrrhizaglabra (Fabaceae) mixed with milk, the juice of the stem of Tinosporacordifolia (Menispermacae) and a paste made of the roots and flowers of Convolvulus pluricaulis (Convolvulaceae) mixed together and taken to prevent dementia, retard age and to improve complexion and digestion.[6]

**What is Dementia?**

Dementia is a descriptive term derived from the Latin, originally meaning “madness” from “root de men’s” (meaning de – ‘without’ + ment, the root of mens “mind”) indicating on observable decline in mental abilities.[7] Dementia is a term that describes the loss of cognitive function, usually because of damaged brain cells. As shown in figure 1 It includes memory loss and at least one of the following: difficulty with language, impaired movement, and inability to plan and initiate appropriate behaviors socially or at work. People with dementia may not be able to care for themselves by getting dressed or eating; they may have trouble balancing their checkbook and may get lost in familiar settings.[8] It is a chronic and progressive syndrome characterised by a decline in mental functioning in which memory thinking, judgment and ability to concentrate are impaired. There also may be a change in personality. In commonly dementia develop more in women than the men, Dementia isn't an acute condition that suddenly appears, and it usually does not require emergency treatment, but it can develop suddenly when a severe injury, disease or toxin destroys brain cells, or it can develop slowly, especially in senior citizens.[9]
It occurs mainly in the older age, and affects 1% of the people 60 years old, and doubles every 5 years until reaching approximately 30%, and as much as 47% in those aged 85-90 years. This condition is characterized by a progressive loss of memory, deterioration of virtually all intellectual functions, increased apathy, decreased speech function, disorientation, and gait irregularities as shown in figure 2. In 2010, there are 3.7 million Indians with dementia and the total societal costs is about 14,700 crore, While the numbers are expected to double by 2030, costs would increase three times. Presently, an estimated 3.7 million Indian people aged over 60 have dementia (2.1 million women and 1.5 million men) as show in figure 3.
Dementia can be classified as either reversible or irreversible, depending upon the etiology of the disease. Fewer than 10% of cases of dementia are due to causes that may be reversed with treatment.

**Etiology**

The loss of memory is considered to be the result of a shortage of the nerve transmitter acetylcholine. It is possible to increase the level of this transmitter in the brain by inhibiting the activity of the enzyme acetyl cholinesterase, which splits or breaks down the transmitter substance. Aging and a family history of dementia are risk factors for developing dementia. The following factors can also add to the risk of developing dementia.

1. Alzheimer disease
2. AIDS
3. Chronic alcoholism
4. Vitamin B12 deficiency
5. Carbon monoxide poisoning
6. Cerebral anoxia
7. Hypothyroidism
8. Subdural hematoma
9. Cerebral ischemia
10. Energy failure
11. Infections
12. Strokes
13. Head injuries
14. Drugs
15. Calcium overload
16. Oxidative stress
17. Glutamate mediated exitotoxicity
18. Structural and functional changes

**Risk Factors**

It is very important to understand the risk factors of dementia to plan preventive interventions. Risk factors can be divided as modifiable and non-modifiable factors.[11]

**Table no 1. Risk Factors of Dementia.**

<table>
<thead>
<tr>
<th>Non modifiable factors</th>
<th>Modifiable factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Vascular Disease</td>
</tr>
<tr>
<td>Family history +</td>
<td>Hypertension</td>
</tr>
<tr>
<td>ApoE4 allele</td>
<td>Diabetes</td>
</tr>
<tr>
<td>Female sex</td>
<td>Dyslipidaemia</td>
</tr>
<tr>
<td>Depression</td>
<td>Nutritional deficiency (B vits)</td>
</tr>
<tr>
<td>Head trauma</td>
<td>Smoking</td>
</tr>
<tr>
<td>Down’s syndrome</td>
<td>Alcohol</td>
</tr>
<tr>
<td></td>
<td>Obesity</td>
</tr>
<tr>
<td></td>
<td>Diet</td>
</tr>
</tbody>
</table>

**Signs and Symptoms**

1. Reduces the ability to learn.
2. Loss of reason, retains, or recall of past experience.
3. Loss of patterns of thoughts, feelings and activities.
4. Additional mental and behavioral problems.
5. Behavior may be disorganized, restless or inappropriate.
6. Some people become restless or wonder about by day and sometimes at night.
7. There may be a sudden change to tears or anger (“a catastrophic reaction”).
8. Suffers to deny that relatives, even relatives in their immediate family, or their relatives.
9. Depression affects 20-30% of people who have dementia, about 20% have anxiety.
10. Cognitive dysfunction of shorter duration is called “delirium”.
11. Especially in later stages of the condition, subjects may be disoriented in time (not knowing the day, week, or even year) in place (not knowing where they are), and in person (not knowing who they and/or others around them are).\[12\]

**Classification of Dementia**

Dementia is yet not classified in specific manner, and different scientist & researchers classified in different – different types that are.\[14\]

**Cortical & Subcortical**

**Cortical**
- a) Alzheimer’s disease
- b) Pick’s disease
- c) Binswanger’s
- d) Creutzfeldt Jakob disease
- e) Paralytic dementia

**Subcortical**
- a) Huntington’s disease
- b) Parkinsons disease
- c) AIDS

**Primary & Secondary**

**Primary**
- Alzheimer's disease
- Pick’s disease
- Vascular disease
- Lewy body dementia
- Huntington’s disease
- Parkinson’s disease
- Paralytic dementia.

**Secondary**
- Alcoholic dementia
- Vitamin deficiency
- Infection disease
Creutzfeldt-Jkob disease
Metabolic disorders
Pseudodementia
Brain tumor.

**Reversible & Irreversible**

**Reversible**

a) Normal pressure hydrocephalus
b) Wernicke-Korsakoff syndrome
c) IRREVERSIBLE
d) Alzheimer’s disease (AD)
e) Vascular dementia (VaD)
f) Lewy body dementia
g) Fronto-temporal dementia (FTD).

**Prevention of Dementia**

Prevention of dementia is the attempt to avoid developing dementia. Although no cure for dementia is available, there are many ways to decrease the risk of acquiring dementia in the first place, including both lifestyle changes and medication.

**Lifestyle**

**Mental Activity**

"Use it or lose it" might be applied to the brain when it comes to dementia. Intellectual activities help keep the mind in shape in the older days. Activities such as reading, playing cards and board games and playing a musical instrument prevent dementia of both Alzheimer's and vascular dementia. The risk decreases proportionally to the frequency of activity,\textsuperscript{[40]} with slower cognitive decline being associated with both late-life and early-life increased cognitive activity.\textsuperscript{[41]}

**Physical Activity**

Since vascular dementia is the second most common form of dementia (after Alzheimer's disease), decreasing risk factors for cerebrovascular disease also decreases the risk factors for dementia. Thus, physical exercise, having good blood cholesterol, healthy body weight and blood pressure lowers the risk of developing dementia. An active lifestyle can almost halve the risk compared to a sedentary one.\textsuperscript{[40]} The effect of physical activity is not
limited to vascular effects. For instance, it can give rise to new neurons in the brain, as well as releasing a substance that can protect them.\textsuperscript{[40]} Some studies say Alzheimer's and other dementias may be caused by high blood pressure, since it can cause blood vessel damage by constricting them.\textsuperscript{[42]}

**Diet**

Those who eat plenty of fruits, vegetables and fish, and have a diet rich in omega-3 fatty acids have a lower risk of developing dementia than those whose diets do not include these healthy food choices. People who regularly drink green tea may have a lesser risk as they grow older. High alcohol consumption increases the risk of dementia while low alcohol consumption may be protective. Niacin (vitamin B\textsubscript{3}) is also believed to prevent dementia as research shows those who have the highest levels of niacin in their blood, are believed to have the lowest risk of developing dementia or having cognitive decline. Niacin is involved with DNA synthesis and repair and also neural cell signaling, it improves circulation and reduces cholesterol levels. In order for niacin to have a positive effect on the brain, it is recommended that patients have 100 to 300 mg per day.\textsuperscript{[44, 45]}

**Sleep Pattern**

Prolonged, more than nine hours, sleep duration (night-time sleep and daytime napping) may be associated with an increased risk of dementia.\textsuperscript{[45]}

**Medication**

**Vaccine**

There is yet no vaccine against dementia. Such a vaccine could activate the body's own immune system to combat the beta amyloid plaques in Alzheimer's disease. One problem to overcome is overreaction of the immune system, leading to encephalitis.\textsuperscript{[43, 44, 45]}

**Hypertension Medications**

The etiology of vascular dementia includes hypertension, and thus, lowering blood pressure with antihypertensives may have a positive effect in the prevention of dementia, just as physical activity.\textsuperscript{[46]}

**Anti-Diabetic Drugs**

Diabetes mellitus is a risk factor for vascular dementia, and is thus lowered with anti-diabetic drugs.\textsuperscript{[47]}
Table 3: Herbal Plants Used For Treatment of Dementia.

<table>
<thead>
<tr>
<th>S. No</th>
<th>Common</th>
<th>Botanical name</th>
<th>Chemical</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Palash</td>
<td>Butea monosperma (Fabaceae)</td>
<td>Triterpen flavonoids, butein, butin, isobutrin, coreopsis, isocoreopsis, sulphurein, monospermoside,</td>
<td>Antimicrobial activity, Antiinflammatory activity, antihepatotoxic, Anticonvulsive, Antidiabetic, Diarrhoea, Alzheimer disease. [52,53]</td>
</tr>
<tr>
<td>2</td>
<td>Ashwagandha</td>
<td>Withania somnifera (Solanaceae)</td>
<td>alkaloids and steroidal lactones</td>
<td>Tumors, tubercular glands, ulcer.</td>
</tr>
<tr>
<td>3</td>
<td>Gaach-munga &amp; agasti</td>
<td>Sesbania grandiflora (Fabaceae)</td>
<td></td>
<td>Diuretic, laxative, antipyretic, bitter tonic, diarrhea, dementia.</td>
</tr>
<tr>
<td>4</td>
<td>Beech wood &amp; Gmelina</td>
<td>Gmelina arborea (Lamiaceae)</td>
<td>Alkaloids, saponins, carbohydrate, phenolic, tannins, anthraquinone.</td>
<td>Stomachic, laxative, anthelmintic, fevers, ulcers, dementia</td>
</tr>
<tr>
<td>5</td>
<td>Nardin &amp; muskroot</td>
<td>Spikenard (Valerianaceae)</td>
<td>tannins, volatile oil, and diterpene acids</td>
<td>Coughs, women enduring menstrual disorders, pulmonary infection, loss of memory.</td>
</tr>
<tr>
<td>6</td>
<td>Wild carrot</td>
<td>Daucus carota (Apiaceae)</td>
<td>Flavonoids, volatile oil, pinene, asparagines,</td>
<td>Flavoring agent, persistent diarrhea, maintenance of memory, lung cancer.</td>
</tr>
<tr>
<td>7</td>
<td>Almond</td>
<td>Prunus amygdalus (Rosaceae)</td>
<td>Amygdalin glycoside</td>
<td>Kidneystones, constipation, laxative, emollient, dementia.</td>
</tr>
<tr>
<td>8</td>
<td>Mate, Yerba mate,</td>
<td>Ilex paraguariensis (Aquifoliaceae)</td>
<td>xanthines ,caffeine theobromine, theophylline</td>
<td>Antioxidants, improve the immune system, burns, dementia.</td>
</tr>
<tr>
<td>9</td>
<td>Maca</td>
<td>Lepidium meyenii (Brassicaceae)</td>
<td>fats carbohydrates protein calcium and potassium</td>
<td>Favorable mood, anxiety, sperm motility</td>
</tr>
<tr>
<td>10</td>
<td>Sesame &amp; Sesame seed</td>
<td>Sesamum indicum (Pedaliaceae)</td>
<td>lignans pinoresinol and lariciresinol</td>
<td>Physiological activities, Antioxidant, prolong youth and beauty, improve memory.</td>
</tr>
<tr>
<td>11</td>
<td>Ginger</td>
<td>Zingiber officinale (Zingiberaceae)</td>
<td>volatile oil, starch, fat citral, Geranial</td>
<td>Stomachin, carminative, flavouring agent, maintenance of memory.</td>
</tr>
<tr>
<td>12</td>
<td>Basil Sweet Basil</td>
<td>Ocimum basilicum (Lamiaceae)</td>
<td>Pinene, eugenol, linalool, Camphor, cineole, estragol</td>
<td>Memory/focus, longevity tonics, antioxidant, antifungal, carminative. [53,54,55]</td>
</tr>
<tr>
<td>13</td>
<td>Blueberries &amp; blueberry</td>
<td>Viccinium (Ericaceae)</td>
<td>Vitamin C, Calcium, Copper, Iron, Cyanidin, Delphinidin, Malvidin, Epicatechin, Myricetin, Quercetin</td>
<td>Gout, longevity tonics, memory/focus, antioxidant.</td>
</tr>
<tr>
<td>S. No</td>
<td>Common name</td>
<td>Botanical name &amp; Family</td>
<td>Chemical constituents</td>
<td>Uses</td>
</tr>
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</tr>
<tr>
<td>14</td>
<td>Club Moss</td>
<td>Lycopodium clavatum (Lycopodiaceae)</td>
<td>Alkaloids , lycopodine, clavatine, clavatoxine, nicotine, flavonoids, apigenin, triterpenes</td>
<td>Memory/focus.</td>
</tr>
<tr>
<td>15</td>
<td>Tulasi</td>
<td>Ocimum tenuiflorum (Lamiaceae)</td>
<td>Ascorbic-acid, beta-carotene, beta-sitosterol, carvacrol, eugenol</td>
<td>Colds, congestion, memory/focus, nausea, antibacterial, antitussive.</td>
</tr>
<tr>
<td>16</td>
<td>Vinca &amp; Periwinkle</td>
<td>Catharanthus roseus (Apocynaceae)</td>
<td>Vincamine, vanillic-acid, ursolic acid, vinblastine, vindoline, vincristine</td>
<td>Diarrhea, hypertension, memory/focus, antibacterial, anticancer, carminative.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>S. No</th>
<th>Common name</th>
<th>Botanical name &amp; Family</th>
<th>Chemical constituents</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>Brahmi</td>
<td>Baccopamonnieri (plantaginaceae )</td>
<td>Bacosides A, bacosides B</td>
<td>Improve memory capacity, improve cognitive ability.[55,56]</td>
</tr>
<tr>
<td>18</td>
<td>Sessile</td>
<td>Alternanthera sessilis(Amaranthaceae)</td>
<td>Carotenoids, triterpene, saponins, flavonoids, steroids, stigmasterol, β-sitosterol</td>
<td>Diuretic, tonic and cooling, hair oils, improve memory.</td>
</tr>
<tr>
<td>20</td>
<td>Pippali &amp; Piper longum</td>
<td>Long pepper (Piperaceae)</td>
<td>Alkaloids, piperine, piplartine, piplastrol</td>
<td>Bronchitis, stomach ache, spleen tumours.</td>
</tr>
<tr>
<td>21</td>
<td>SankhPushpi</td>
<td>Convolvus plricaulis (Convolvulaceae)</td>
<td>Coumarins, flavonoids, alkaloids,</td>
<td>Insomnia, fatigue, low energy level, loss of memory.</td>
</tr>
<tr>
<td>22</td>
<td>Aconite &amp; monkshood</td>
<td>Aconitum (Ranunculaceae)</td>
<td>Terpenoid, aconitine</td>
<td>Cold, fever, pneumonia, asthma, loss of memory.</td>
</tr>
<tr>
<td>23</td>
<td>Mandukaparni</td>
<td>Centella asiatica (Mackinlayaceae)</td>
<td>0.1% essential oils, volatile oil, asiatic acid, madecassic acid, asiaticoside A, asiaticoside B, asiaticoside B</td>
<td>Antibacterial, anti-inflammatory, anxiolytic, wound healing, balance memory.</td>
</tr>
<tr>
<td>24</td>
<td>Liquorice</td>
<td>Glycyrrhiza glabra (Fabaceae)</td>
<td>Saponins, glycosides, coumarins, flavonoids.</td>
<td>Asthma, digestive system, inflammation, ulceration, loss of memory.[56,57]</td>
</tr>
<tr>
<td>25</td>
<td>Guduchi</td>
<td>Tinospora cordifolia (Menispermaceae)</td>
<td>Diterpene, Polyphenols, Polysaccharides</td>
<td>Gout, jaundice, rheumatism, tuberculosis,</td>
</tr>
</tbody>
</table>
**NSAIDs**

Non-steroidal anti-inflammatory drugs (NSAIDs) can decrease the risk of developing Alzheimer's and Parkinson's diseases.\[^{49}\] The deposits irritate the body by causing a release of e.g. cytokines and acute phase proteins, leading to inflammation. When these substances accumulate over the years they contribute to the effects of Alzheimer's.\[^{48}\] NSAIDs inhibit the formation of such inflammatory substances, and prevent the deteriorating effects.\[^{50, 51}\]

**Herbal Medicine**

Herbal medicine is the use of plants to restore or maintain health. Phytomedicine is a term often used to denote a more scientific approach to herbal medicine, where, for example, products are standardised and concentrated to contain specified amounts of the identified active substances in the herbal products.

**Traditional Herbal Medicines Use for Treatment of Dementia**

**Complementary and Alternative Medicine and Dementia**

Public interest in complementary therapies is growing at a significant rate, easily outpacing the research conducted into their safety and effectiveness. People are often attracted to the 'natural' and safe image of these therapies, particularly in treating chronic conditions, for which conventional treatments are often less than completely effective. This sheet addresses

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<tbody>
<tr>
<td>26</td>
<td>Aamla</td>
<td><em>Phyllanthus emblica</em> (Phyllanthaceae)</td>
<td>vitamin C, emblicanin A, emblicaninB, phyllanemin in flavonoids</td>
</tr>
<tr>
<td>27</td>
<td>Punarnava</td>
<td><em>Boerhavia diffusa</em> (Nyctaginaceae)</td>
<td>Punarnavine, alkaloid,</td>
</tr>
<tr>
<td>28</td>
<td>Wild castor &amp; wild croton</td>
<td><em>Baliospermum montanum</em> (Eupharbiaceae)</td>
<td>Alkaloids, phenols, carbohydrates, tannins, steroids, saponins, flavonoids, cardiac glycosides, proteins, terpenoids, resins</td>
</tr>
<tr>
<td>29</td>
<td>Palash</td>
<td><em>Butea monosperma</em> (Fabaceae)</td>
<td>Triterpene, flavonoids, butein, butin, isobutrin, coreopsin, isocoreopsin, sulphurein, monospermoside,</td>
</tr>
</tbody>
</table>
some of the issues surrounding the use of complementary and alternative treatments and outlines the current evidence for their effectiveness.

**What is Complementary and Alternative Medicine?**
The term complementary and alternative medicine (CAM) covers many therapies. There is no apparent connection between many of these therapies, which often have diverse origins, theories and appearances. There is no precise definition of what exactly constitutes CAM. A good practical definition is ‘interventions neither taught widely in medical schools, nor generally available in hospitals’. What may be ‘complementary' medicine in one country may be ‘conventional' in another. Vitamin supplementation may or may not be considered CAM depending on whether the dose is the recommended daily amount or not. Furthermore, many health care professionals now offer CAM treatments within the bounds of the NHS. Common therapies that are covered in this leaflet include herbal medicine, aromatherapy and massage, music therapy, acupuncture, diet supplements and melatonin and bright light therapy.

**Complementary Versus Alternative Medicine**
CAM should only be used in addition to, not instead of, conventional medicine. If you decide to use CAM, it is important that you continue to see your doctor and keep him or her informed of the treatments you are undergoing and any medication you are taking. Although most CAM therapies have a good safety profile, it is not true to say that they are 100 per cent safe just because they are 'natural'. There are serious safety concerns about some forms of complementary and alternative medicine. For example, herbal preparations may interact harmfully with conventional drugs. It is, therefore, very important for your doctor to know what you are taking. Don't worry about telling your doctor what you are using. Awareness of complementary and alternative medicine is increasing amongst the medical profession and most doctors are sympathetic to its use.

**What is the Potential for Cam to Treat Dementia?**
Although the symptoms of dementia are numerous and change over time, most types of dementia have symptoms in common. It is useful to consider which symptoms are prominent in an individual when assessing which CAM intervention may be most suitable. Although the symptoms of dementia are numerous and change over time, most types of dementia have symptoms in common. It is useful to consider which symptoms are prominent in an individual when assessing which CAM intervention may be most suitable. Preventing the
progression of dementia is currently the subject of trials of ginkgo biloba and vitamin E. One review concludes from a number of studies that good nutrition, in the form of vitamins, minerals and other micronutrients, may prevent cognitive decline.\[64\]

**Dietary Supplements**

Good diet is essential for health. The use of vitamins and other supplements is often considered CAM even though it may not technically be so.

**Antioxidants**

There is growing evidence demonstrating the effectiveness of these compounds, which are found naturally in fruit and vegetables, in preventing the development of Alzheimer's disease. Reviews of the existing work in this area have been done and several antioxidants have shown positive effects: in particular, ginkgo biloba, vitamin E, selegiline and idebenone. One study examined vitamin E (2,000 units daily), selegiline (10mg daily) and a combination of the two in Alzheimer's disease, for a two-year period. The results were positive, although there is some controversy over the way they were reported. There seemed to be fewer falls in the group taking vitamin E. The authors recommend replication of the study to confirm their positive results. A large study investigating the possible prevention of dementia in patients with mild memory problems by taking vitamin E daily is currently underway. A study of idebenone found it to have a positive effect in Alzheimer's disease, with a dose-dependent effect (a better effect with a greater dose). It was also found to be safe. Positive effect and safety remained good after two years on the supplement.\[65,66\]

**General nutrition**

Weight loss in patients with Alzheimer's disease is a recognised problem. It seems to be due to lack of attention to proper nourishment rather than part of the disease process. Dietary supplementation can produce a significant increase in body weight amongst patients with dementia, as found in patients on a hospital ward. Nutritional awareness is important for elderly people in general: one study of 96 healthy individuals aged 65 or over found that dietary supplementation of vitamins and trace elements improved mental function.\[66,67\]

**Aromatherapy and Massage**

Aromatherapy is the therapeutic use of essential oils derived from plants. The oils are generally Applied directly to the skin, often accompanied by massage Heated in an oil burner to produce a pleasant odour Placed in a bath.\[67\]
CONCLUSION
Herbs may play a promising role in the early treatment of Dementia and other conditions involving poor memory and dementia. One of the chief benefits is that they have a low toxicity compared to pharmaceutical agents. another beneficial thing is that plants are showing very less interaction with other plants than the pharmaceutical agents, mostly time we view plants or vegetable are improved body immune system thus less chances to develop diseases. When plants are used for treatment of any disease, than they cure that particular disease along with the treat some minor or major type of other diseases, it is generally not seen in case of allopathic drug. There is no reason why botanicals cannot be used adjunctively with drugs, or other complementary approaches such as same, fish oil, and antioxidant vitamins. A review of the literature indicates that the Indian medicinal plants are the most prolific source for treatment of dementia.

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