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Herbal Treatment of Alzheimer Disease

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Alzheimer describes a syndrome of Alzheimer disease it is a chronic neurodegenerative disorder characterized by the progressive loss of dopaminergic neurons of substantia nigra pars compacta in the ventral midbrain.These processes are then responsible for the clinical features of Alzheimer including bradykinesia, resting tremor, rigidity, and difficulty in initiating movements . The prevalence of Alzheimer disease in industrialized countries is estimated at 0·5% of the general population and about 1.5% of the population older than age 60 years. People of all ethnic origins can be affected, and men are slightly more prone to the disorder. It described as *paralysis agitans* or *shaking palsy*, the term "Alzheimer disease Causes.The exact cause of disease is still a mystery, but many pathogenetic factors such as oxidative stress, free radical formation, mitochondria dysfunction, apoptosis, neuro inflammation, and genetic susceptibility are critically involved in Alzheimer. Certain endogenous or exogenous toxins such as 6-hydroxydopamine and 1- methyl-4-phenyl-1,2,3,6-tetrahydropyridine, rotenone, Paraquat, Maneb, manganese, toluene, N- Hexane, carbonmonoxide, Mercury, Cyanide, Copper, Lead and Trichloroethylene, certain medications, viral infection, Alzheimer's disease, amyotrophic lateral sclerosis (ALS), Alzheimer.

Keywords- Alzheimer, Rigidity, Pathogenetic,Idustrialized, Neuro etc.

Introduction-

The four primary symptoms of Alzheimer disease are tremor or trembling; rigidity; bradykinesia and postural instability. autonomic dysfunction, cognitive, psychiatric changes, sensory symptoms, seborrhea and muscle atrophy.

Diagnosis

Alzheimer disease is mainly diagnosed clinically, The clinical diagnosis includes normal ageing, essential tremor, drug-induced , syndromes, vascular pa, and normal pressure hydrocephalus Alzheimer. Less common entities with dopa-responsive dystopia juvenile-onset Huntington’s disease, pallidopontonigral degeneration. In atypical cases neuroimaging and laboratory test are necessary MRI, EEGs, PET,CT.,SP etc . Laboratory tests can include blood tests, such as a complete blood count (CBC), a chemistry panel, urin analysis, and blood glucose testing.

Treatment-

Treatment using synthetic drugs includes

Levodopa is the first line treatment for Alzheimer, is a metabolic precursor of dopamine that is

About 70% of patients show initial improvement with levodopa , particularly of rigidity, hypokinesia, tremor and bradykinesia, and about 250% are restored virtually to normal motor function.**Selegiline** is a brain and was initially used as an adjunct to the levodopa·**Dopamine receptor agonists** Bromocriptine, an ergot derivative, and few newer, nonergot drugs, ropinirole, pramipexole, rotigotine and Apomorphine.**Bromocriptine** inhibits the release of prolactin from the anterior pituitary gland, its duration of action is longer than that of levodopa. Newer dopamine receptor agonists include lisuride, pergolide, ropinirole**,** cabergoline and pramipexole.T ype of glutamate receptors.**Acetylcholine antagonists** Benztropine, trihexyphenidyl, procyclidine and biperiden interfere with this inhibitory effect on dopaminergic nerve terminals, suppression of which compensates for a lack of dopamineby muscarinic acetylcholine receptors·

Experimental and Discussion-

Herbal Treatment-

The herbs which shows the significant effect in treating are described Alzheimer below:

***Acanthopanax senticosus* Harms; (family: Alariaceae)**

Takahiko Fujikawa *et al* found that Hundred ethanol, fifty % ethanol and hot water extract of *Acanthopanax senticosus* stem bark at dose of 260 mg/kg p.o shows prophylactic effect on behavioral dysfunction of Alzheimer such as bradykinesia, Catalepsy.

Withania somnifera;* (Family: Solanaceae); Syn: *Physalis somnifera

Animals are treated with root extract for 6 days and 27 days after 3 days after treatment. The extract at the dose of 96 mg/kg shows significant improvement in motor neurons function, catecholamines, potential antioxidant levels and prevent lipid peroxidation ie. reduced elevated levels.

***Uncaria rhynchophylla;* (family: Rubiaceae)**

URE significantly reduced neuronal cell death, increased Gsh Levels (74.55±1.57%), attenuated Ros and inhibited the activation of caspase-3 in dose dependant manner induced by 6-Ohda

***Nardostachys jatamansi;* (Family: Valirenaceae); Syn: jatamansi**

Extract significantly and dose-dependently inhibit marked increase in drug- induced rotations and deficits in locomotor activity and muscular coordination which is a reliable marker for nigrostriatal dopamine depletion. Increased D2 receptor population in striatum, increased activities of Sod, Cat and Gsh significantly restored by pretreatment with Jatamansi by Gsh -enhancing or antioxidant effect in 8-lesioned rats and increased TH-IR fiber density by pretreatment clearly signifies the dose-dependent increase in the number of surviving neurons and confirming the anti- Alzheimer effects of Ethanolic extract of Nardostachys Jatamansi.

***Chrysanthemum morifolium Ramat;* (Family: Asteraceae)**

Dong-Kug Choi *et al* used water extract of *Chrysanthemum morifolium Ramat* on SH-SY5Y cell culture of MPP+-induced in in-vitro model. Sh cell culture is assessed for determination of cell viability, Isolation of total RNA and expression analysis, Immunoblot analysis, Flow cytometric detection of apoptotic cells, Measurement of intracellular reactive various Concentrations (2,12, 102_g/mL) inhibit the mitochondrial apoptotic pathway, significantly ameliorate the Bax/Bcl-2 ratio elevation in SH-SY5Y cells, suppress the accumulation of Ros and attenuate cell death in a. And shows powerful antioxidant activity with radical scavenging activity for Dpph, superoxide, hydroxyl and alkyl radicals.

***Cassiae semen*; (family:Leguminosae)**

Myung Sook Oh *et al* reported that daily oral administration of 85% ethanolic extract of *Cassiae semen (seed of Cassia obtusifolia*) for 15 days significantly inhibit the movement impairment and mediated apoptosis mechanism in Pc12 cells, also protected the Da cells against 6-Ohda- and Mpp+-induced neurotoxicities in primary mesencephalic cultures .

***Anemopaegma mirandu;* (family:Bignoniaceae); Syn: Catuaba**

At concentrations ranging from 0.0097 mg/mL to1.250 mg/mL, extract shows the effectiveness by increasing cell survival by 22.3± 3.6%, 22.0±2.1% and 15.8±0.7%, restoring cellular and nuclear morphology to undistinguishable levels from the survival cells under control and preserving citoplasmatic membranes and mitochondria membrane in human neuroblastomas Sh- Sy5y cells.

***Hypericum perforatum*; (Family:Hpericaceae)**

Activity, mRNA level, increased SOD and CAT activity and modified redox index thus protecting the cell from the damaging effect of hydrogen peroxide and shows neuroprotective activity .

***Gastrodia elata Blume*; (Family: Orchidaceae)**

Dong Kug Choi *et al* found that pre-treatment with ethanolic extract of *Gastrodia elata Blume* at various concentrations (12, 112,212_g/mL) ameliorate the MPP+-induced Bax/Bcl-2 ratio elevation in SH-SY5Y cells, attenuated capase-3 activation and Parp cleavage in a dose-dependent manner, shows anti-oxidant effect with significant radical scavenging activity for Dphh, and alkyl radicals, suppressed the accumulation of RosS and inhibit the both intracellular ROS production and downstream apoptotic signaling pathways.

***Centella asiatica;* (Family: Umbelliferae); Syn: Hydrocotyl asiatica**

It acts by exhibiting its antioxidant activity in hippocampus and corpus striatum region of brain.

***Thuja orientalis*; (Family: Cupressaceae); Syn: Biota orientalis**

Release, and caspase-3 activation, suppressed the increased level of ERK phosphorylation and anti- mitochondrial-mediated apoptosis

***Bacopa monniera;* (Family: Scrophulariaceae) ; Syn: Brahmi**

At concentrations of 0.06 and 0.2% for 8 days in the diet it exhibited significant diminution in the levels of endogenous oxidative markers viz., malondialdehyde, hydroperoxide and protein carbonyl content. Further, BM offered complete protection against rotenone (600 mM) induced oxidative stress and markedly inhibited dopamine depletion (head region, 33%; body region, 44%) and also conferred significant resistance (43–54% protection)

daidzein and genistein at concentrations of 50 µM and 100µM inhibited caspase-8 and partially inhibited caspase-3 activation, providing a protective mechanism against 6-Ohda-induced cytotoxicity in NGF-differentiated PC12 cells .

Chinese Medicines

In the literature studies, it was found that many Chinese medicines and formulation have been used in the treatment of Alzheimer. This includes:-

Zhen-Wu-Tang consists of the Radix Paeoniae Alba (30 g), Rhizoma Atractylodis Macrocephalae (10 g), Rhizoma Typhonii Preparata (12 g), Poria (11 g), Rhizome Zingiberis Recens (11 g), at dose of 9 and 17mg/kg/day for 3 weeks.

Herbal Solution

Now a day's ayurvedic formulations are also commonly used for the prevention and treatment of parkinsonism, formulation includes Mucuna pruriens. The medicines having Cognition enhancing activity can also be used for anti-Alzheimer activity, it includes Br-16A (Mentat), Brahmi (Bacopa monnieri), Mandukaparni (Centella asiatica), Ashvagandha (Withania somnifera), Vishnukrantha (Evolvulus alsinoides), Discussion

A huge number of herbal medicine ie herbs, formulations have been reported for their effective action in prevention and treatment of Alzheimer. The many constituents presents in these plants used against Alzheimer are Dopamine, flavonoids, alkaloids, other polyphenols.

Conclusion-

This is largely because most herbal medicines are complex mixtures of chemical components and have diverse biological and pharmacological actions. The information collected in this review on a large number of herbal extracts and constituents that possess therapeutic effects on animal models of Alzheimer may be used in a search for novel pharmacotherapies from medicinal plants for these disorder. Considering the limitations of the available conventional pharmacotherapeutic agents for the disease, particularly the treatment refractoriness, high relapse rates and diverse adverse side effects that occur with long-term treatments, herbal remedies may provide an alternative for patients, especially for those with lingering conditions and intolerance to adverse effects.

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