LITERATURE REVIEW:

1. (Simon Allard S, et al.,)\textsuperscript{58} investigated on role of NGF Maturation, destruction of cholinergic neuro transmission. research suggested that genetetic phenotype has a prominent role in memory loss in conditions includes dementia of genetic alzheimers disease and also age induced alzheimers disease the outcome mechanism can help in finding treatment in neuronalal distribution and age induced dementia Gentical studied carried in mapping and cloning fond that the gene located in chromosomal sequence of 21 can code for APP a protein which have a major role in signaling in transport in the membranes of endoplasmic reticulum and even the building blocks proteins which makesamyloid protein which is having a close relation with the receptor proteins. Alteration in the gene ie the mutation is also considers a major risk factor. Generation to generation the disease can be transmitted and causing a burden to a sufferer. now due to the advancement in the recombinant technology it is becoming to understand better and can also able to correct the mutated gene by using gene theraphy but hundred percentage success has not been achieved but researchers all over the world are working on this gene..

2. (Tamotsu Imanishi T, et al.,)\textsuperscript{60} investigated the activity of AChE Methane Sulfanyl Fluorides which showed action by acting on central nervous system. In the study two anticholinesterase agents were compared and the available data from the result indicates that methyl sulfonyl fluoride can be used in certain cogentive disease and other dementia.anticholinestrases are the enzymes which causes hydrolysis of acetyl choline into acetate and choline there by it decreases the concentration of acetyl choline in the brain region which is the major reason for dementia in many people got confirmed. Acetyl choline is the major neuro transmitter in the transmission of the nerve impulses in the formation of the memory in the nervos system and it was thought that the reduction in the level of acetyl choline is the major reason behind the pathogenesis of the alzheimers diases and a hypothes is also put forward which explains the role of acetyl choline the formation of the memory and it is called as cholinergic hypothes. The current allopathic treatment of alzheimers disease uses anticholine esterase inhibitors which can block the enzyme reversibly there by it can prevent neuronal degradation of acetyl choline the researchers also targeted the same
enzyme and methyl sulfonyl fluoride shown significant action. The result also suggest that the anticholineserase inhibitors possesses nootropic activity.

3. (Susanne Hartz S, et al.)\textsuperscript{59} evaluated the cost effectiveness of anticholinesterase in the management of alzheimers disease the study was conducted in parts of Germany the study employed the usage of donepezil which is a anticholinesterase inhibitor which can increase the acetyl choline level in nerve terminals in the regions of brain by preventing its degradation. Loss of memory ie amnesia occurs due to disturb in neuronal transmission due to many reasons chief among them is reactive oxygen free radicals the aqueous extract of the herb possess oxygen free radical scavengering activity and due to its antioxidant activity it can protect nerve damage and also it posses anticholinestrase activity which is a chief enzyme involved in the hydrolysis of acetyl choline which has been considered as a neurotransmitter engaged in the transmission of memory. Cholinergic hyposthesis suggests that due to hyper action of the anticholinestrase enzyme due to its rapid hydrolising property it causes decrease in the level of neuronal acety chlone the aqueous extract here not only shown antioxidant activity but it also blocked hydrolysing enzyme so it caused improvement in the memory Study also suggests that the drug donepezil which act by inhibiting acetyl cholinesterase and also increases acetyl choline level which is very widely prescribed by the physicians that more than ninety five percentage affected patients with dementia and associated problems are strongly dependent on donepezil and also some case studies with donepezil treated patients for long term also got recovered when comparing to the many dementia patients who were not treated with any drugs.

4. (Lara Pizzorno et al)\textsuperscript{44} reviewed on AD etiology and treatment approaches in the effective managing of alzheimers disease in aged peopulation and its prevention; the progression of the disease, the review had highlighted on the natural substances which are commonly widely used which includes turmeric aswagandha, these are very ancient herbs which were used form many centuries for their curative property of different disease which include the treatment of nervous disorders, the claimed property was witnessed because of their strong antioxidant property both herbs posses
potential free radical scavengering property and many preclinical and clinical studies are being carrying with this herb to treat various disease this review focoused on the usage of this herbs in the treated of mental disorders which includes alzheimers disease, some research suggests that ashwagandh having property to combat the formation of beta amyloid plaques which is considered as a primary reasons for dementia even ashwagandh posses plaque dissolving property, which on earlier studies suggested that herbs having a pivote role in reduction of the beta amyloid plaques by involving in dissolving it.

5. (Scott E. Counts, et al.)\textsuperscript{56} investigated nerve growth factor receptors certain dementia like alzheimers disease these receptors in the cholinergic pathway stimulates the production of acetyl choline which mediates learning and memory in the person destruction of the receptors leads to disturbed in the cholinergic transmission leads to dementia The neurochemical imbalances occurs with AD. Researchers reported that neurotransmitter level in cerebral cortex is directly propotional to the neuronal number. Degradation of neurons causes reduced neurotransmitter level a new hypothesis called cholinergic hypothesis bases on this factor. It not only occurs with destricution of neuron but also due to elevated levels of two enzymes acetylcholinesterase (AChE) and butyrylcholinesterase (BuChE) which hydrolyses acetyl choline.

6. (Bengt Winblad et al.,)\textsuperscript{13} reviwed cost factor in theraphy the was study was focused on the therapeutic benefit of anticholinestrase when comparing the therapeutic benefit of donezipil it is well acceptable in the patients due to its better tolerability least side effect and can show effective beneficial with the aged people suffering form alzheimers disease. Loss of memory ie amnesia occurs due to disturb in neuronal transmission due to many reasons chief among them is reactive oxygen free radicals the aqueous extract of the herb possess oxygen free radical scavengering activity and due to its antioxidant activity it can protect nerve damage and also it posses anticholinestrase activity which is a chief enzyme involved in the hydrolysis of acetyl choline which has been considered as a neurotransmitter engaged in the
transmission of memory. Cholinergic hypothesis suggests that due to hyper action of the anticholinestrase enzyme due to its rapid hydrolising property it causes decrease in the level of neuronal acety chlone the aqueous extract here not only shown antioxidant activity but it also blocked hydrolysing enzyme so it caused improvement in the memory.

7. (Lap Ho, et al.) investigated effectiveness of food supplement with slight altering a decaffeinated green coffe, shown significant improvement in the energy utilization and production in the brain, tea and coffe become a traditional drink among the public and herbal supliments can also be used in the form of tea which can be used in the treatment of the disease. A separate branch of medical treatment called as neutraceuticals which uses these basic the formulation which comes under neutraceuticals are having the same curative property but which can be used as a food supplement. Tea and coffe are having strong central nervous system stimulant property this property made it used in the management of the mood because it is having mood improvement action. It is also having a property to generation on intrest such that it also motivates learning and learned information is stored. Herbal food suppliments are having wider application in the field of health due to there free availability and free assesibility.it improved metabolic activity in the brain the study also concludes that coffe also reduced distrubiton in the glucose tolerance response due to high fat intake the increase in the mitochondrial energy production in the brain was indirectly assessed by its increase in oxygen consumption capacity.

8. (Fedotova J, et al.), investigated the pharmacotherapeutical activity of a polyprenol formulation named ropren in experimental rat models where alzheimers disease was induced in the animals by administration of beta amyloid proteins from exogeneous source which caused dementia due to its deposition in the brain which altred spical learning capability in the animals the forumulation treated group shown better improvement in the
cognitive functions in the experimental animals models. Accumulation of beta-amyloid plaques which is made up of beta-amyloid proteins and apoE, is the main pathogenesis behind the hypothesis. APP is a amyloids precursors proteins which can be seen in between the cell membrane. Different enzymes can be seen in this region which includes alpha, beta and gamma sceretases, among this alpha secrete made plays a major role in the precipitation of AD. These alpha secretases causes break down of APP into small fragments, they will be more soluble fragments when comparing with the source from where they got generated. The small pieces are having the property of aggregation they starts grouping together, they can also disturb in the synaptic transmission after getting precipitated on the synaptic region they can cause impairment in the memory. The aggregated parts of amyloid proteins then strats to deposit on the nerve fibrils, but during prolong exposure it causes toxicity in the nerves. They can cause inflammation in the nerve due to this the death of the nerve cells may occur. Even apoptosis may also be affected.

9. (Maria Vittoria Spampinato, et al.)[48], (2012) studied on human volunteers in some clinical trials conducted when the involvement of apolipoprotein E in a loss in the mass of gray matter in patient those suffered from alzhemers disease. Gental studied carried in mapping and cloning in found that the gene located in chromosomal sequence of 21 can code for APP a protein which have a major role in signaling in transport in the membranes of endoplasmic reticulum and even the building blocks proteins which makesamyloid protein which is having a close relation with the receptor proteins. Alteration in the gene ie the mutation is also considers a major risk factor. Generation to generation the disease can be transmitted and causing a burden to a sufferer. now due to the advancement in the recombinant technology it is becoming to understand better and can also able to correct the mutated gene by using gene therapy but hundred percentage success has not been achieved but researchers all over the world are working on this gene. The regions of brain also develops atrophy include hippocampus and neocortical which are the potential regions which plays chief role in the cognitive actions in the human.
10. (Ilkay Orhan et al.)32 reviewed on various herbal therapeutical approaches in the treatment of alzheimers disease in experimental animals models many standardised herbal extracts are widely employed in the treatment of alzheimers disease are also found effective includes ginkgobiloba and other alkaloids form various natural sources are having a greater role in the treatment of alzheimers disease, the phytochemical present in trace amount are claimed for its beneficial role in the treatment of several diseases. Presence of flavoniods, terpins and alkaloid which are having a strong antioxidant role in preventing free radical damage action on many tissues, it can cause damage of some nerves of brain leading to mental abnormalities the herbs are claim to have protective role it can be used as both curative agents and also as a preventive agent in the diseases where involvement of free radical generation in the pathogenesis. These phytochemicals in very little quantity can cause healing property. several herbs from Indian system of medicine and also from other alternative system of medicine which include Chinese system of medicine which are widely used still in current medical practice are also been claimed for the therapeutetic activity, even many herbs were traditionally used from ancient time, even many herbs in diffent type of formulation are used widely still for their therapeutetic activity. The main aim of the current review article to collect the information of various herbs which has been claimed for their uses in the alzheimers diseases were given much intrest and all possible mode of action of the various herbs inthe treatments of alzheimers disease are given primary importance.

11. (Amy H. Moore et al)7 reviewed therapeutical approche for the treatment of alzheimers disease various nonsteriodal anti-inflammatory agnets in the managment of alzheimers disease neuroinflammatory reactions in the patient had shown prominent role in the development of alzheimers disease inflammation in the nerves can cause damage and can distruction of nerve which can be treated by using NSAIDs. Steroids and NSAIDs. They can reduce various secondary mediators of inflammation which can elevate the signs of inflammation their by leading to stress on the cell some times leading to permanent loss of cellular structure and also normal function leading to necrosis. But neurons once destructed cannot be regenerated.
Many drugs under this category are available in the market which possess strong anti-inflammatory action. Prevention of neuro inflammation by using these category of drugs some time can improve cognition by its neuro protective function but individually drug cannot be used in treatment of alzheimers disease but in combination it can be used but how drugs engaged in workd is still remains unclear.

12. (Keyvan dastmalchi, et al)\textsuperscript{59} (2012) reviewed focused on Therapeutic approaches of herbal drugs in the management of alzheimers disease more than twenty one types of herbs belonging to different families were employed in the treatment of alzheimers disease in various traditional system of medicinal incuding India, having a wide variety of herbal plants which were clearly with practical usage in very ancient days were documented for its high medicinal values in traditional history periods, different herb belonging to different families are claimed for the curing AD. This review focused on the herbs which got scientific background in the treatment aof AD. Many herbs are used individually in the treatment of the disease and some are used in the combination they are called as polyherbal formulations. One by fourth of the modern drugs formulations which are purchased on request/ prescription currently depend their origin of raw material to higher medicinal plants which are widely available in the tropical regions of forests in India and also thourgh out the world..

13. (Fang Wang et al)\textsuperscript{23} (2012) investigated on the possible approaches in the treatment of alzheimers disease beta amyloid binds in the areas of the brain causes neuronal damage the drug candidate under investigation showed anti aggregation of beta amyloid plaques research leads to the development of new approach in the pharamacotheraphy of alzheimers disease. Beta amyloid is a protein which is prudence due to genetically activation of certain genes like APOE genes which upon activation can causes synthesis of more amyloid once it increase in the serum it will slowly starts to precipitate in the that areas of the brain which are engaged with the memory of the person, once get precipitated it causes disturb in the blood supply across the region which become the major reason for the progression of the disease. The stress can release reactive oxygen free radicals which causes permanent damage to
the neuronal structure such that it cuases amnesia as age increases the progession of the disease it can also progress.

14. Joshi H et al. (2010) investigated potential role of Ocimum tenuiflorum linn as a AChE inhibitor in the treatment of dementia in alzheimers disease and also called as nootropic agent which bosster the memory and cognitive impairment in the people suffering. Loss of memory ie amnesia occurs due to disturb in neuronal transmission due to many reasons chief among them is reactive oxygen free radicals the aqueous extract of the herb possess oxygen free radical scavengering activity and due to its antioxidant activity it can protect nerve damage and also it posses anticholinestrase activity which is a chief enzyme involved in the hydrolysis of acetyl choline which has been considered as a neurotransmitter engaged in the transmission of memory. Cholinergic hyposthesis suggests that due to hyper action of the anticholinestrase enzyme due to its rapid hydrolising property it causes decrease in the level of neuronal acety chlone the aqueous extract here not only shown antioxidant activity but it also blocked hydrolysing enzyme so it caused improvement in the memory. The plant extract in various concentratton were used in the study shown both improvement in learning and memory in experimental animal model.

15. Hanumanthachar joshi, et al., (2006) investigated on Nootropic Activity of Calyces of Hibiscus sabdariffa Linn as a AChE inhibitor in alzheimers disease and also called as nootropic agent which bosster the memory and cognitive impairment in the people suffering. Loss of memory ie amnesia occurs due to disturb in neuronal transmission due to many reasons chief among them is reactive oxygen free radicals the aqueous extract of the herb possess oxygen free radical scavengering activity and due to its antioxidant activity it can protect nerve damage and also it posses anticholinestrase activity which is a chief enzyme involved in the hydrolysis of acetyl choline which has been considered as a neurotransmitter engaged in the transmission of memory. Cholinergic hyposthesis suggests that due to hyper action of the anticholinestrase enzyme due to its rapid hydrolising property it causes decrease in the level of neuronal acety chlone the aqueous extract here not only shown
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16. (R. Douglas Shytle et al.,)\textsuperscript{54} (2009) investigated extracts of turmeric on its anticholinesterase activity the study highlights the potential role of curcuminoinds in alzheimers disease animals model. Turmeric is used as a condiment in India many research is still under progess with turmeric since it has a high medicinal values it is proved for its neuropro-tective and free radical scavenger activity which can helps for its clamied property. Still raw turmeric powder are used as a dusting powder in the management of wound since its having wound healing property. several data obtained from the study suggest that the curcuminoinds possess strong antiamyloidogenic activity and posses its action by antioxidant property. Acetyl choline is the major neuro transmitter in the transmission of the nerve impulses in the formation of the memory in the nervos system and it was thought that the reduction in the level of acetyl choline is the major reason behind the pathogenesis of the alzheimers diases and a hypothesis is also put forward which explains the role of acetyl choline the formation of the memory and it is called as cholinergic hypotheis even it was suggested that the turmeric can also shown anticholinesterase activity by preventing the hydrolysis of acetyl choline which may be also considered as a major mechanism behind the anti dementia activity.

17. (Milind parle et al.,)\textsuperscript{53} (2009) evaluated on a polyherbal formulation abana for its anticholinesterase activy in the brain it is an Indian formulation employed as an nootropic activity successive administration of abana in animals. The poly herbal formulation used in the screening method is one of the widely used medicine in the ayurvedic drugs possessing many activity in the combined formulation and the poly herbal formulation has capture a greater market in India. And it is also been exported to other countries the current studies in the animal improved not only the condition of dementia byt also marked improvement in the level of acetyl choline was observed suggesting it as a potent cholinesterase inhibitor. Acetyl choline is the major neuro transmitter in the transmission of the nerve impulses in the formation of the memory
in the nervous system and it was thought that the reduction in the level of acetyl choline is the major reason behind the pathogenesis of the阿尔海默氏症 diseases and a hypothesis is also put forward which explains the role of acetyl choline the formation of the memory and it is called as cholinergic hypothesis.

18. (Gupta Shikha et al.,)²⁷ (2012) formulated a new polyherbal formulation and evaluated it for its memory enhancing property in various experimental animal models. The herb administered animals shown improvement in learning and memories. When comparing with the control group, Amnesia was induced in the group by injecting scopolamine which can block cholinergic transmission in the nerve terminal disturbing the learning and storage in the animals. It is temporally induced amnesia which can be overcome by blocking the action of scopolamine. Piracetam was used as a standard drug in the treatment of amnesia. The herb treated group overcome scopolamine action it can follow any one of the mode of action which the herb extracts posses. anticholinesterase, anti-inflammatory, and antioxidant properties of poly herbal formulations may be primarily considered to its memory-enhancement effect. Therefore, Thespisia populnea bark improving memory, and it would be worthwhile to explore the potential of this plant in the management of Alzheimer patients sodium nitrite was employed for inducing amnesia in the animal and standard drug piracetam was used as standard test polyherbal formulation the study suggested that the test drug employed posses anti alzheimers activity.

19. (Manish Kumar Saraf et al.,)²⁷ (2011) investigated Bacopa monniera potential activity in the management of an alzheimers disease it was screened in various model includes morriers water maze here spatial learning behaviour in animals were compared and scopolamine was used to induce amnesia in animal the data suggest that the herb posses nootropic activity by improving memory in animals. The herb administered animals shown improvement in learning and memories. When comparing with the control group, Amnesia was induced in the group by injecting scopolamine which can block cholinergic transmission in the nerve terminal disturbing the learning and storage in the animals. It is temporally induced amnesia which can be overcome
by blocking the action of scopolamine. Pirecatam was used as a standard drug in the treatment of amnesia. The herb treated group overcome scopolamine action it can follow any one of the mode of action which the herb extracts posses. Cholesterol-lowering, anticholinesterase, anti-inflammatory, and antioxidant properties of *Bacopa monniera* may be primarily considered to its memory-enhancement effect. BM having strong anti-cholinesterase activity, there by it can increase brain acetyl choline level by preventing its degradation from choline esterase enzyme, many of the herbs claimed for treatment of dementia follows the same property as general. Acetyl choline is the major neurotransmitter in the transmission of the sensory information in the learning and storage of the learned information. Many of the herbs in ayur vedic forumaulation having same therepueitic action. Therefore, *Bacopa monniera* improving memory, and it would be worthwhile to explore the potential of this plant in the management of Alzheimer patients in animals models also shown improvement in the memory behavioural response in the animal morrie water maze was employed to screen the activity in alzheimers disease induced animal models.

20. (Julio Rubio *et al.*, 2011) studied aqueous extract of *Lepidium meyenii* on animals models. Different doses of aqueous extracts of the herb was used in the screening for its memory enhancing or improving property in the experimentally ovary disected mice, they have reduced estrogen level. The groups of animals which were treated with different doses of aqueous extract of the herb had shown improving in memory. The memory enhancing activity of crude extract was recognised due to its neuroprotective property. Loss of memory ie amnesia occurs due to disturb in neuronal transmission due to many reasons chief among them is reactive oxygen free radicals the aqueous extract of the herb possess oxygen free radical scavengering activity and due to its antioxidant activity it can protect nerve damage and also it posses anticholinestrase activity which is a chief enzyme involved in the hydrolysis of acetyl choline which has been considered as a neurotransmitter engaged in the transmission of memory. Cholinergic hyposthesis suggests that due to hyper action of the anticholinestrase enzyme due to its rapid hydrolising property it causes decrease in the level of neuronal acety chlone the aqueous extract here not only shown
antioxidant activity but it also blocked hydrolysing enzyme so it caused improvement in the memory.

21. (Mohammad Hossein Dashti-R et al.,)\(^5\) (2009) investigated alcoholic extracts of *syzygium arromalicticum* in experimental animal model successive adminstring of the alcoholic extract in mice. The herb administered animals shown improvement in learing and memories. When comparing with the control group. Amnesia was induced in the group by injecting scopolamine which can block cholinergic transmission in the nerve terminal disturbing the learing and storage in the animals. It is temproraly induced amnesia which can be overcome by blocking the action of scopolamine. Pirecatam was used as a standard drug in the treatment of amnesia. The herb treated group overcome scopolamine action it can follow any one of the mode of action which the herb extracts posses. Cholesterol- lowering, anticholinesterase, anti-inflammatory, and antioxidant properties of Thespia populnea may be primarily considered to its memory-enhancement effect. Therefore, *syzygium arromalicticum* improving memory, and it would be worthwhile to explore the potential of this plant in the management of Alzheimer patients in animals models also shown improvement in the memory behavioural response in the animal passive avoidance was employed to screen the activity in alzheimers disease induced animal models.

22. (Yuen-Shan Hoa et al.,)\(^6\) (2007) studied on neuropro-tective activity in mice. Neurotoxicity was induced by administering beta amyloid protein in test group and also received alkaline extract of *Lycium barbarum* the data obtained from the study suggest that the herb has a potent neuropro-tective property which can be utilized for the treatment of certain neurodegenerative diseases. The groups of animals which were treated with different doses of aqueous extract of the herb had shown improving in memory. The memory enhanching activity of crude extract was recognised due to its neuropro-tective property. Loss of memory ie amnesia occurs due to disturb in neuronal transmission due to many reasons chief among them is reactive oxygen free radicals the aqueous extract of the herb possess oxygen free radical scavengering activity and due to its antioxidant activity it can protect nerve damage and also it posses anticholinestrase activity which is a chief enzyme involved in the hydrolysis
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23. (Bhattacharya, S.K., et al.,)\textsuperscript{14} (2007) evaluated the potent activity of a poly herbal formulation for its efficacy in the management of alzheimer's disease. Many polyherbal formulations are available in market which is getting manufactured from many pharmaceutical industries, this evidence shows that there is an increase demand for the herbal formulation even they can compete with the allopathic dosage form. This is only for the reasons in allopathic medicines there is not appropriate drugs which can treat this suffering disease but many of the herbal drugs had already captured the market which is having a very prominent role in the treatment of the disease.\textsuperscript{1}int the study done by Bhattacharya, S.K., et al., the test drug used for screening in experimental animal was a trade named product called mentat which had provided a strong anticholinestrase activity and also it is having a important role in the improvement in the animal group induced alzheimer's disease.

24. (John M. Ringman., et al.,)\textsuperscript{35} (2010) investigated on Curcumin in AD. Turmeric is a well known spice in all parts of India which possesses many therapeutic activity. Since ancient days there are lot of evidences in the use of turmeric in management of acute and chronic disease of many category the phytochemical investigation on turmeric reveled the presence of many trace constituents which held for their Therapuetical response among them one is Curcumin on serval animal studies suggested that it is having a potent role in beta amyloid plaques dissolving which make it possible in the treatment of alzheimer's disease. beta amyloid plaques are one of the major reasons of the neuronal dange generated due to oxidative stress. By reviewing on the study made by John M. Ringman., et al., data suggested that improvement in the memory behavoiour in treated group similar to standard group.
25. (Joshi et al.)\textsuperscript{31} (2010) evaluated the nootropic effect of \textit{Zingiber officinale} in mice. \textit{Z. officinale} improved memory in aged group and the drug showed its action due to its potent inhibition of acetyl choline esterase the report also highlights that ginger also claimed for antioxidant activity it may be one of the possible mechanism of action of the drug in the managening of disease. Ginger is one of the spices used in the Indian curries having a wide medicinal value it has been screened for many activites. In the present study it shown increase in the acetyl choline level by preventing the hydrolysis of acetyl choline it has been achieved here by reversibly blocking an enzyme which can causes hydrolysis of acetyl choline thereby reduces its concentration. The reported data suggested that it is also having neuropro-tective action due to its strong oxygen free radical scavenging action. All together the activity reports that the ginger can be used in the treatment of alzheimers disease. Percentage impaired age wise suggest that in the age sixty five to sixty nine ten percentage of impairment was recorded. In the age range frommm seventy to seventy four it was found to be fifteen percent and in between seventy five to seventy nine it was documented of nineteen percent and in age from eighty to eighty four it was twenty percent and age from eighty five to ninty nine it was around forty percent and age hundered and older it was documented a highest impaired rate above ninety percent with this document it is suggesting that advancement of age is a major risk factor in the Alzheimer disease. Among all the hypothesis which are put forward in understanding the pathogenesis and pro gestion of alzhiemers disease it proves a common information that the changes in the brain is mainly due to the advancement in the age. It is a major factor which can leads to worsen the disease due to its distractive action on nuerodegenration which can disturb nuerohumerol transmission in the brain.

26. (Chintawar etal)\textsuperscript{20} (2002). studied aqueous extract of \textit{Albizzia lebbeck} in experimental animal model. Different doses of aqueous extracts of the herb was used in the screening for its memory enhanching or improving property in the experimentally ovary disacted mice, they have reduced estrogen level. The groups of animals which were treated with different doses of aqueous extract of the herb had
shown improving in memory. The memory enhancing activity of crude extract was recognised due to its neuropro-tective property. Loss of memory i.e. amnesia occurs due to disturb in neuronal transmission due to many reasons chief among them is reactive oxygen free radicals the aqueous extract of the herb possess oxygen free radical scavenging activity and due to its antioxidant activity it can protect nerve damage and also it possesses anticholinesterase activity which is a chief enzyme involved in the hydrolysis of acetyl choline which has been considered as a neurotransmitter engaged in the transmission of memory. Cholinergic hypothesis suggests that due to hyper action of the anticholinestrase enzyme due to its rapid hydrolising property it causes decrease in the level of neuronal acety chlone the aqueous extract here not only shown antioxidant activity but it also blocked hydrolising enzyme so it caused improvement in the memory.

27. (Iyer MR, Pal SC etal.)\textsuperscript{33} Studied on Lawsonia inermis its role in memory and behaviour. The behavior of the animals are all mediated through noradrenaline but its level is decreased by metarobolism by an enzyme mano amino oxidase. pirecatam was used as a standard drug, causes increase in movement, even though the drug used widely in the treatment of alzheimer's disease. Which as a side effect causes mental confusion is due to increase in the nor adrenaline level here the same was checked by using, alpha methyl dopa included hypothermia model, in the experiment the rats were daily subjected for routine check of the body temperature which was carried by using digital thermometer called as telethermometer and the temperature were recorded separately with different groups and which are compared with the control group. here it does not caused hypothermia suggesting that increase in nor-adrenaline transmission, even there by mental confusion as side effect which is quiet common with piracetam therapy due to stimulation of adrenergic transmission and be overcome. Clonidine induced hypothermia model was used to check the behavioural action of animal the physiological concept behind selection of this model is that adrenaline belongs to the class of neurotransmitter from autonomic nervous system which has control over all involuntary actions of the body and also it have its major role in the regulation of various body parameter like body temperature, blood pressure and many more mainly regulates the homeostasis of the body where it tend
to regulate the inner environment of the body continuously whenever there fluctuation occurs in the body. Adrenaline can show its physiological response ie, regulatory or modulatory action by binding to its receptors which belong to a family called gprotein coupled receptors so as a conculsion it can be considered that nor adrenaline regulates body temperature by using clonidine it blocks alpha receptors there by reduces body temperature it may be due to reduced action of noradrenaline it regulates the release of noradrenaline centrally by autoregulation.

28. (Narasapur VU etal)\textsuperscript{51} (2007). Potentiation of catalepsy produced with fewer doses which can cause a stage below catalepsy called as sub-cataleptic doses of prazosin and haloperidol in various experimental animals’ models. Haloperidol is used widely to check the catalepsy in the animals. Catalepsy is a condition in which animals shows immobility such that it cannot show any type of movement during this period this stage is called as catalepsy. This experiment is done to check about the central dopamine action which can mediate movement. Dopamine is a neurotransmitter which regulate behavior and locomotion in animals or human beings, disturbance in the dopaminergic transmission is the reason for the cetelpsy. Many drugs which can show nootropic activity is thought to cause inhibition of the dopamine such that as a common side effect it can cause decrease in the movement. In order to confirm wether the drug shown its nootropic by blocking the central dopaminergic transmission or by other mechanism this can be confirmed by doing this experiment. Pireacetam a standard drug which used in the treatment of dementia is having this side effect. In the present study the investigators studied about the role of prazosin relationship between the drug and the catalepsy.

29. (Cuello AC, et al.,)\textsuperscript{18} (2007) discussed on NGF-cholinergic and its chief role in the brain aging, which is also consider which occurred due to the natural ageing phenomenon and also sometimes with some neuronal diseases like MCI and Alzheimer's disease. Nerves in the Fore-brain ar mostly parasymphathetic nerves because many of the cholinergic agonists or mimicing drug shown a promising role in the management of AD. Percentage impaired age wise suggest that in the age sixty five to sixty nine ten percentage of impairement was recorded. In the age range
fromm seventy to seventy four it was found to be fifteen percent and in between seventy five to seventy nine it was documented of nineteen percent and in age from eighty to eighty four it was twenty percent and age from eighty five to ninty nine it was around fourty percent and age hundered and older it was documented a highest impaired rate above ninety percent with this document it is suggesting that advancement of age is a major risk factor in the Alzheimer disease. Among all the hypothesis which are put forward in understanding the pathogenesis and progresion of alzhiemers disease it proves a common information that the changes in the brain is mainly due to the advancement in the age. It is a major factor which can leads to worsen the disease due to its distractive action on nerodegenration which can disturb nuerohumeral transmission in the brain

30. (Schliebs R, et al.,)\textsuperscript{57} (2011) investigated The parasympathetic in aging and neuronal degeneration. Parasympathetic nerves projection which can be seen highly in two areas of the brain like hippocampus and cerebral cortex region. The major neurotransmitter in this region is thought to be acetyl choline. The cholinergic neurons of this complex have been assumed to undergo moderate degenerative changes during aging, resulting progressing memory deficits with aging. Beta amyloid protein accumulation in the nerves can also create an artificial environment which resemble the codition which is same as to the natural ageing because this beta amyloid plaques after depositing in certain areas of the brain can disturb neurohumoral transmission which become the major reason for AD and in young or in adult this may be the reason which precipitate dementia. Percentage impaired age wise suggest that in the age sixty five to sixty nine ten percentage of impairment was recorded. In the age range fromm seventy to seventy four it was found to be fifteen percent and in between seventy five to seventy nine it was documented of nineteen percent and in age from eighty to eighty four it was twenty percent and age from eighty five to ninty nine it was around fourty percent and age hundered and older it was documented a highest impaired rate above ninety percent with this document it is suggesting that advancement of age is a major risk factor in the Alzheimer disease. Among all the hypothesis which are put forward in understanding the pathogenesis and progresion of alzhiemers disease it proves a common information that the
changes in the brain is mainly due to the advancement in the age. It is a major factor which can leads to worsen the disease due to its distractive action on nuerodegenration which can disturb nuerohumerol transmission in the brain.  

31. (GuptaYK., et al. 2010) reviewed therapeutical use of potent of herbals for its cerebral ischemic property. Cerebral ischemia causes disturbances in a variety of cellular and molecular mechanisms, including oxidative phosphorylation, membrane function, neurotransmitter release, and free radical generation. It has been years since tissues-type plasminogens activators was one of the licensed medicine by Food Drug Adminstration in the treatment condition like strokes, which is only narrow line of application. For a drug to posses its stroke prevention or storke treatment stagerness it should posses a strong nerve protective action or antioxidant properities are the primary requirement of the drug but the drug which was approved for the treatment of stroke which is not having neuronal protection action which was a greater failure in the treatment. In this review this was emphasized form the author about the stroke and its mangments. Even it should have the property of dissolving the platelets there by ease the blood circulation.

32. (Nicolette S.L. Perry et al.,) 2003 reviewed pharmacologically activity and pilot tolerability clinicaltrial of S. lavandulaefolia Vahl. extract and constituent after the study many conculsion are given by the researchers on usage of the herb the herb used upon screening given a strong evidence for haing many properties which are very much essential for the treatment of the neurodegeneration in animals. Some parameters which was given positive response which includes, anticholinesterase property , free radical scaverowing action, reduction of inflammation in the tissues due to its action by counteracting on the secondary meidiators release , oestrogenic and CNS depressant (sedative) effects all of which are currently relevant to the treatment of Alzheimer’s disease (AD). The essential oils present in the herb inhibits the enzyme acetylcholinesterase (AChE) from human brain tissue and bovines erythrocyes andseperate substances like monoterpenoid is the major constituent inhibit acetyl choline esterase according to the dose dependent manner. In vivo studies AChE inhibition of selected brain region which was homionised after
separation which includes AChE activity was blocked upon treatment the treatment was given to the animal by oral route and the values obtained were recorded. Even many clinical studies carried out with particular type people essential oil given orally shown significant improvement in the cognition of the persons,

33. (Chun Shi, et al.)\textsuperscript{22}, (2010). reviewed on Ginkgo biloba Extracts to confirm the possible role in the treatment of Alzheimer Disease: Ginkgo biloba tree, extract was used in the present study and it was designated with the code Eb-766 inorder to hide the identity of the herb and it was used in the animals study, the herbal drug is having a major role in the treatment of the disease and also acquire the Indian market and is one of the most popular herbal medicine which is very widely used for the management of various diseases including alzheimer disease. cholinergic nerve stimulation the nerve terminals secretes acetyl choline which can show its actions by binding to cholinergic muscuranic receptors. Many hypothesis are focused on the cholinergic transmission and their deficits and their major role in the memory. Based on this consideration cholinergic hypothesis generated suggests that acetyl choline is the major neurotransmitter of all cranial nerve which are having a direct link with the brain and having a major role in the memory. Many studies review and datas suggests that the major proportion of the dementia suffers are having problem in the level of the acetyl choline a major hormone in learning and memory. All the treatment which are symptomatic are target to arrest the metabolism by blocking the enzyme which metabolises the acetyl choline. It is metabolized by two enzymes called as pseudo cholinesterase and butryl choline esterase, decrease in the level of acetyl choline causes deficit in the memory. In the study many things are considered which can be help to know to improve the treatment and to improve the drug efficacy in the treatment. The given dose and making it possible to permeable to the blood brain barrier (BBB), and also prevention of nerve damage this properties are quite common requisite in the drug which are supposed to be claimed in the treatment of the alzheimer diseases and other neuro degenerative diseases.

34. (Kirti S. Kulkarni et al.)\textsuperscript{12} (2011)., investigated the effect of *Prunus amygdalus* nuts on cognitive functions total cholesterol levels and cholinesterase activity in SA
induced amnesia in rats the paste of PA nuts was administered orally all doses one fifty , three hundred and six hundred mg/kg body weight of animals and it was administrated for seven and fourteen consective days to the respective group of rats piracetam dose per body weight was used as a standard nootropic agent, passive avoidance model is used to find the short term memory and learning behaviour in the animals and motor activity paradigms brain ChE activity and serum biochemical parameters estimation were also done with the total cholesterol, total triglycerides and glucose these biochemicals substances were thought to be the cause of generation of oxygen reactive free radicals in the body and cholesterol is found to cause atheroma in the major blood vessels which can cause atherosclerosis or arteriosclerosis and it was also consider as one of the major factor in the formation of nerve plaques and adjacent nerve tissue damage. On investigation PA was found to produce cholesterol lowering action it was noticed that reduction in triglycerides. Which can act as a synergistic in the treatment of nervous disorders especially alzhermers disease. PA also posses strong anticholinesterase inhibition action there by it can increase acetyl choline level a major neuro transmitter in the transmission of sensory information of the memory by preventing its degration by the acetyl choline esterase enzyme, many drugs which are already marketed in the market also having the same mechanism in the management of the disease.

35. (M. Ramanathan etal)55 (2010) investigated neuroprotection effect of choloroform methanolic (80:20) extract of casicatica was evaluated on the action of free radicals generation and excitotoxicity in monosodium glutamiate treated female Sprague dawley rats. Loss of memory ie amnesia occurs due to disturb in neuronal transmission due to many reasons chief among them is reactive oxygen free radicals the aqueous extract of the herb possess oxygen free radical scavenger activity and due to its antioxidant activity it can protect nerve damage and also it posses anticholinesterase activity which is a chief enzyme involved in the hydrolysis of acetyl choline which has been considered as a neurotransmitter engaged in the transmission of memory. Cholinergic hypostthesis suggests that due to hyper action of the anticholinestrase enzyme due to its rapid hydrolising property it causes decrease in the level of neuronal acety chlone the aqueous extract here not only shown antioxidant activity
but it also blocked hydrolysing enzyme so it caused improvement in the memory.
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show its actions by binding to cholinergic muscuranic receptors. Many hypothesis are
focused on the cholinergic transmission and their deficits and their major role in the
memory. Based on this consideration cholinergic hypothesis generated suggests that
acetyl choline is the major neurotransmitter of all cranial nerve which are having a
direct link with the brain and having a major role in the memory. And even it have
been suggested that the patients suffering from amnesia are having common problem
with the acetyl choline level. Many of the drugs in the treatment are targeted on the
metabolism of acetyl choline. It is metabolized by two enzymes called as pseudo
cholinesterase and butryl choline esterase, decrease in the level of acetyl choline
causes deficit in the memory. In the general behavioral locomotor activities values
suggests that are possising the claimed activity and the region in hippocampus is
also had protection with the use of CA.

36. (F.J. Wippold et al) (2010) pathology review on Neuropathology for the
Neuordiologist Plaque also Tangle Histological find out in intracellularly and
extracellularly inclusions and structures often provide a tissue diagnosis of a specific
diseases proccess. India stands for world’s second largest populated country, and
major portion of the elder population and a very less percentage of young population
and very small popotion of children (attention deficient syndrome) also affected by
very miserable and highly care dependence nerve degenerative disease of
Alzheimer’s affects anyone at anytime of their whole life concerned without having
any warning indicators or any type of early symptoms due to confusion in the
diagnosis of particular type of dementia and it may be linger in many cases until it
takes the final stage due to disease progression. Alzheimer’s in India also quickly
becoming often more and more common due to the globalization, as the society is
also trying in expanding into one of the world’s largest and fastest running industrial
giants among the entire worldMoreover, neuroradiologsts is having close relation is
great in the detection and prevention of progression of the dementia examples a major
is AD, The purpose of this report is to review the significance of plaques and tangles
in AD.
37. (Anil Kumar., et al..)\(^8\) (2007) investigated that Colchicin-induces neuronal toxicity as an animal models, results indicated that colchicines-induced cognitive impairment and oxidative stress can be used as an animal model for drug screening for Alzheimer’s disease. Colchicines given groups took more time to find the region in the morris water maze it become the evidence that colchicines worsen the condition. The same was observed in the elevated plus maze model where it taken more time to enter into the enclosed arms of the elevated plus maze which is a indicator of dementia. The exact mechanism by which the coclchicines induced amnesia is not known completely, but it is thought due to production of more oxygen free radicals which can cause a permanent impairment in the cognition.

38. (Toshiaki Irie, et al.)\(^6\) (1995) investigated on Brain acetyl choline metabolizing enzyme Acetylcholinesterase Activity: with PET Tracer AD animal model. The extent in the development in the methodological aspects in the treatment of various approach in the dementia includes alzheimer’s disease here are some of the important suggestion got in the treatment of the alzheimer’s disease for the improvement of the present therapy . in this type of approach the movement of the acetyl choline and metabolism occurs with the help of enzyme AchE and can give break down product some time act as a precouer in the synthesis of new acetyl cholone molecule, which is trapped at the site of its production. MP4Pesters is having a more sensitive response in the level of parasympathetic neuro transmitter and in the experimental animal cerebralcortex was identified to posses a lesser percentage around fifty which is a strong , indicator of the applicability of the methodology in the diagnosis of the alzheimer disease.

39. (Alikunju Shanavas et al.)\(^5\), (1995) investigated on some type of enzymes which are having a major role in the transmission of the primary response inside the cell by their secondary message transmission which includes t kinases which are done in widely accepted model called as heat shock models of rats, upon study with these modles the possible reasons for the occurrence and aggression of Alzheimer disese is due to the over activation it also occurs some time due to the inhibitory action shown by the special group of enzymes called as kinases after heat shock was having a more
prominent action when the values were compared with the control group of the model. Nerve growth factor are having direct role in the stimulation of the growth of nerve which are having specific role. the possible mode in the treatment of the AD is to improve the cholinergic transmission across the brain. These growth stimulating factors are having a key role in promoting the growth of the nerve when the new nerve get generated or damaged nerve got repaired they can release the synthesized neurotransmitter both synthesis and release become active and also it can be treated by pharmacological intervention to increase cholinergic transmission. Because it is hyperphosphorylated in Alzheimer disease many of the investigation in this area alos highlights and suggest that many secondary pathway which involves in the inter cell communication and in the synthesis of the proteins which may be the required enzymes or a neurotransmitter can be activated by the release and activation of the secondary messanger pathway major among them include JNKinases, GSKinases-3b, and Cdkinases5 which is having its action in the occurrence of the disease.

40. (Joab Chapman, et al)^34^, investigated on the prophylactic remedy in the mangment of dementia by giving Immunization and it was tried with the various experimental animal models, in the present study they tried to develop an immunization vaccine to the nerve that get affected in the AD, the vaccine was targeted to the nerves which are actively enganged in the production of acetyl choline in the brain. On review of different research article the genral conculsion with all the researchers around the world due to the rapid hydrolysis of acetyl choline it causes the defecency of acetyl choline a major neurotransmitter which is enganged in the transmission of nerve impulse in the brain a rapid hydrolysis by the metabolizing enzyme is the chief reason behind this, and also leads to some behavior pattern in the animals and the behavior pattern of the persons are regulated form the acetyl choline. Even the study conducted by immunization with the developed vaccins shown a significant improvement in the level of acetyl choline by its protective action against the nerves so it confirms that the cholinergic PK immunized under gone experimentalused animals which shownb diffuculty in both remembering and also in learning. The vaccine used in the study confirmed its action by increasing the antidoby formation against the nerves. It is the
normal immunization schedule the substance which was administered through outside increased the release of antibody which is directed agianist AD

41. (Govind Pandey, et al.) studied and reviewed on different preclinal research work which was carried on Ocimum sanctum for its pharmacological activities which was clamied by the herb Ocimum sanctum in different experimental animals. The dired material were used for the treatment of age induced amnesia in the present study whole of dried plant of OS. Amnesia was artificially induced in the animals by using scopolamine the drug have been used by researcher to induce amneais in the experimental animal model they are going to interfere with the acetyl choline transminssion in the brain wher acetyl choline is considered to be a important neurot ransmitter in the learning in the memory of the living system.

Naturally aged group was used in the study here the age was induces in the animal group was due to natural age were also used in the research where is age is consider as the inducing factor of forgetfulness in the aged mice group. Passive avoidance paradigm which is widely used for the assessment of the memory in the animals in the preclinal studies which is considered as exteroceptive behavioural model where the stimulus will be induced from the externally administered scopalamine. Upon administration of OS extracts in the treated group it shown improvement and shown an increasing in step-down latency (SDL) and upon examination of the animals brain, whole brain homogenate was prepared, after sacrifice they were conducted for spectroscopic examination by using a control and test group and blank the values obtained by the test group upon comparing with the control it confirmed the acetylcholinesterase inhibitiory activity in the OS treated group. Which is the indicator of the improvement in the memory due to the increase of acetyl choline level in the brain.

42. (Julie Vining Smith et al) Elevated that oxidative free radicals in Alzheimer’s disease can be treated by using Ginkgo biloba extract Eb 766 Furthermore, an age-dependent increase in hydrogen peroxide-related reactive oxygen species are involved. Which may cause mutation genetically causing permenant gene defeict problems. Theseresults supporting various hypothesis which involves the role of
reactive oxygen species generated by reduction oxidation reaction. Loss of memory ie amnesia occurs due to disturb in neuronal transmission due to many reasons chief among them is reactive oxygen free radicals the aqueous extract of the herb possess oxygen free radical scavenging activity and due to its antioxidant activity it can protect nerve damage and also it posses anticholinestrase activity which is a chief enzyme involved in the hydrolysis of acetyl choline which has been considered as a neurotransmitter engaged in the transmission of memory. Cholinergic hyposthesis suggests that due to hyper action of the anticholinestrase enzyme due to its rapid hydrolysing property it causes decrease in the level of neuronal acety chlone the aqueous extract here not only shown antioxidant activity but it also blocked hydrolysing enzyme so it caused improvement in the memory

43. (Mani Vasudevan et al.,) investigated Memory-Enhancing Activity of Thespisia populnea in experimental animals. The research was carried our by using rat in different groups. Rats were administred bark extract and were the screened for its activity. The herb administered animals shown improvement in learing and memories. When comparing with the control group. Amnesia was induced in the group by injecting scopolamine which can block cholinergic transmission in the nerve terminal disturbing the learing and storage in the animals. It is temporaly induced amnesia which can be overcome by blocking the action of scopolamine. Pirecatam was used as a standard drug in the treatment of amnesia. The herb treated group overcome scopolamine action it can follow any one of the mode of action which the herb extracts posses. Cholesterol- lowering, anticholinesterase, anti-inflammatory, and antioxidant properties of Thespisia populnea may be primarily considered to its memory-enhancement effect. Therefore, Thespisia populnea bark improving memory, and it would be worthwhile to explore the potential of this plant in the management of Alzheimer patients

44. (Mani Vasudevan et al.,) investigated abana a poly herb prepration of India for its anti dementia property in experimentally induced dementia in rat model. 3 different dose of polyherbal formulation was administred to rats of seperate group for successive fifteen days, which included both young and aged rats. The doses selected
were fifty, hundred and twohundred mg/kg body weight of the animals. And in the
young group to induce amenisa scopolamine and diazepam were used. Various
extreceptiive and intractiveptive models were employed like elevated plus maze, hebbs
maze and scopolamine and diazepam induced amnesia respectively. Test drug treated
group taken reduced duration to enter into the closed arem of the elevated plus maze
indicating its learning and memory improving property and even improvement in
amnesia was seen with hebbs William maze combacting scopolamine induced
amnesia in the animal group . The results obtained form the study revaled that poly
herbal prepration of abana posses strong anti-amenesic property and the possible
mechanism of action may be due to its non steroidal anti inflammatory action or
antioxidant property.

45. (Kiran G.et al)\textsuperscript{41} screened on the effect of Ageratum Conyzoides L for its anti-
demaentic property in various experimentally induced dementia in mice. In this
activity herb methanolic extracts were employed for screening its activity two
different doses were used ie two hundred and four hundred mg/kg. The herb were
adminisitred for all twenty one days and MWM and passive avoidance model were
employed for screening its activity. For induction of amnesia cortico steroids was
administered for all twenty one days by subcutaneous route the purpose of
administration of corticosteroid is to induce amnesia. Glucocorticoids on prolong
usage can act by blocking the hippocampus region in the brain which plays a major
role in the identification and recoginsation upon prolong administration of steroids for
twenty one days it causes the disturbance in the memory of the animals. The herb
treated in the different doses reversed the dementia caused by steroid. In this
screening Ageratum Conyzoides extracts shown dose dependent response
fourhundred mg/kg shown a improvement in the memory and behavior in the treated
group animals

46. (Khan dureshahwar et al )\textsuperscript{40} screened Ziziphus mauritiana leaf extract for its
nootropic activity in experimental animals n-butanol fraction of methanol extract. A
dose of ten mg/kg twenty five mg/kg and fifty mg/kg were selected for screening its
activity different dose of extract were administered for all seven days the models used
were elevated plus maze and passive avoidance model standard drug used was pirecatam and for inducing amnesia scopolamine was adminsitred trough intraperitonal route. The results suggests that the extract can improve not only short term memory but also long term memory. cholinergic nerve stimulation the nerve terminals secretes acetyl choline which can show its actions by binding to cholinergic muscuranic receptors. Many hypothesis are focused on the cholinergic transmission and their deficits and their major role in the memory. Based on this consideration cholinergic hypothesis generated suggests that acetyl choline is the major neurotransmitter of all cranial nerve which are having a direct link with the brain and having a major role in the memory. And even it have been suggested that the patients suffering from amnesia are having common problem with the acetyl choline level. Many of the drugs in the treatment are targeted on the metabolism of acetyl choline. It is metabolized by two enzymes called as pseudo cholinesterase and butryl choline esterase, decrease in the level of acetyl choline causes deficit in the memory. The possible mechanism of action extract may be considered to be the stimulatory action of cholinergic nerve which increased acetyl choline level which can play an important role in the learing and memory.

47. (Milind parle etal) investigated anti-amnesia activity of chyawanprash which is a marketed prepration in experimental animals. Mice were used for screening the activity and amnesia was introduced in the animals by using scopolamine adminsitred fourty five minutes before carrying the experiment through intraperitonal route which causes blocking of muscuranic recepetor there by inhibiting cholinergic trasmsmission which causes amnesia, scopolamine is used as a preanaesthetic medication to cause amnesia. Chywanprash consists of poly herb combination with sugar base which is widely used by a major population because it is having various helth improving properties in the experimenta chywnprash was adminstred fifteen days for carrying out the screening for its nootropic activity. Both extraceptive and intraceptive models were employed extraceptive model include elevated plus maze hebbs willimas maze and in intraceptive model scopolamine induced modle were used. Upon drug treating in different groups it shown an improvement in the learning behavior and storage of learned activity was confirmed by observing the parameters.
It shown reduction in the time to enter and stay in the closed arm of elevated plus maze and also time to find the safety zone in the morries water maze also reduced upon treating when analyzing with the control group. All the data suggest that chywanprash posses anti-amnesic activity. In biochemical investigation chy shown reduction in the hydrolysis of acetyl choline due to the blocking of acetyl choline metabolizing enzyme. And it also consists of several ingredients which are widely used for its anti-oxidant property overall all the properties in the poly herbal chy held responsible for the improvement in the memory of experimentally induced amnesia in the animal models.Loss of memory ie amnesia occurs due to disturb in neuronal transmission due to many reasons chief among them is reactive oxygen free radicals the aqueous extract of the herb possess oxygen free radical scavengering activity and due to its antioxidant activity it can protect nerve damage and also it posses anticholinesterase activity which is a chief enzyme involved in the hydrolysis of acetyl choline which has been considered as a neurotransmitter engaged in the transmission of memory. Cholinergic hyposthesis suggests that due to hyper action of the anticholinestrase enzyme due to its rapid hydrolising property it causes decrease in the level of neuronal acety chlone the aqueous extract here not only shown antioxidant activity but it also blocked hydrolysing enzyme so it caused improvement in the memory.

48. (Habibur rahaman etal)\textsuperscript{29}. Screened a rhizome Nardostacys jatamansi in experimental animals for its nootropic activity. Methanolic extracts of nardostacys jatamansi were prepared and were adminstired in different doses for fourteen days at a dose of two hundred mg/kg and four hundred mg/kg per oral and the standard drug used for reference is the pirectam which is also administered orally. And even the animals were not allowed to sleep for five days. In this model amnesia was introduced by sleep depravation due to this memory impairment is occurred. This act disturbs the phosphorlyation of kinases enzymes a membrane bound enzyme which helps in the signal transduction in the hippocampus region in the brain. Due to depreve in the sleep it causes mental confusion in the animals and inablity to recall and to take decision various models were employed for screening the activity of the rhizome
extract y-maze MWM EPM were used after administration of the herbal extract the improvement in the behioural pattern in the animals confirms that rhizome nardostacys jatamansi posses anti amnesic activity.

49. (Vyawahare ns etal)\textsuperscript{62} studied neuropharmacolgy actions of piper betel in various experimental animal models. There study concluded with many observations which include, piper betel leaf hydrochloric extracts were prepared and were administred in different doses with different groups. Here main concentration was given to check extracts activity on the motor actions various models were employed to check it which includes haloperidol induced cateplsy model and alpha methyl dopa caused hypothermia model. In the study amphetamine was used as a comparing standard which can cause in sympathetic transmission in the brain which causes increase in the motor activity in the animals, pirecatam was used as a standard drug, which is already used widely in the treatment of alzheimers disease. Which as a side effect causes mental confusion is due to increae in the nor adrenaline level here the same was checked by using alpha methyl dopa incuded hypothermia model.

In the present study it increases hypothermia suggesting that increase in nor-adrenaline transmission. There by we can avoid mental confusion with the side effect which is quiet common with piracetam theraphy due to stimulation of adrenergic transmission. The second neurotransmitter getting effect is dompaine there is a relationship between the treatments of the Alzheimer disease by using pirectam which can decrease the level of dopamine. Here it was confirmed by doing a simple experiment ie haloperidol induced cateplsy in animals. Piracetam treated animals group increased the time spend as cataleptic stage and even extract treated group also increase cataleptic stage time this is due to its action on dopamine blocking action which causes catalpsy.

50. (Blanco MM etal )\textsuperscript{16} evaluated neurobehavioral of essential oil of cymbopogon citrates in experimental animals two doses of essential oils were used in the study which includes five hundred mg/kg and one gram /kg body weight it was screend wether it possesses anxiyolitic property and for cns stimulation activity, various
models were employed in the study to anxiety behavior in the animals models like elevated plus maze, light dark model, and open filed model were used, and to asses its central nervous system stimulant property, actophotometer were used. After administering the essential oil it was studied with elvated plus maze which shown increase in the closed arm entry, which is suggesting that the essential oil posses strong anxyolitic activity, and in the light dark model entry to the dark get increased indicating the same, in the open field model increase ambulate raring got altered suggesting its anxiolytic action. To confirm its central nervous system activity shown without having alteration in the motor system either by stimulatin, or by inhibiting the motor system, a confirmatory model was used ie actophotometer here the essential oil adminsited group does not shown any changes either stimulation of the central nervous system by increasing the movement in the activecage there by the action shown by the essential oils is purely due to its anxiolytic property but not due to stimulation of nervous system.