EFFECT OF TRANSCRANIAL LOW LEVEL LASER WITH INFRA-RED RADIATION ON TREATMENT OF ALZHEIMER DISEASE

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The object of this study is to approve the role of transcranial low level laser with infra- red radiation on the management of AD via working on one of the several hypotheses of Alzheimer disease which is the cholinergic hypothesis, which is the oldest theory to explain Alzheimer disease during this theory, a severe degeneration of a specific brain area called nucleus basalis of meynert,which contains the most abundant cholinergic neurons ,thus leading to a decrease in the ACH levels which has a very important cognitive ,learning and memory functions besides being a neurotransmitter so during application of low level laser with infra-red radiation on the brain , it induces neurogenesis in the hippocampus which receives a subcortical input from the nucleus basalis of meynert and it induces neurogenesis in the neocortex which receives wide projections from the nucleus basalis of meynert plus, there is some sort of cholinergic circuitry as the nucleus basalis of meynert give wide projections to the neocortex, the NBM receive its cortical input from a few cortical area, as the temporal pole, hypothalamus and medial temporal cortex and, entorhinal cortex where thehippocampus is located and undergoes neurogenesison top of that LLL improves retrograde transport of nerve growth factor from the neocortex to the NBM and enhances the action of brain derived neurotrophic factor within the NBM besides the effect of LLL on the possible regeneration of the NBM, it induces neurogenesis in the hippocampus as it is a primary area to be damaged in AD, so this experiment shall be conducted on rats by artificially degenerating the nucleus basalis of meynert by the help of veterinary medicine and theresults shall be received via morris maze.