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Themes :	علوم اعصاب
Title :	Molecular study of caffeine effect on remyelination in DG area of rat′s hippocampus following local demyelination induction by lysolecithin
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Abstract :	Introduction: Multiple Sclerosis is one of the commonest demyelinating and disabling diseases with numerous motor andsensory disturbances. Hippocampus is known as one of the important gray matters which be affected by MS. In this study, the effect of caffeine on olig2(marker of reactive oligodendrocyte progenitor cells) expression and remyelination in rat′s hippocampus was investigated following demyelination induction by lysolecithin. Methods: 2µl lysolecithin was injected streotaxicallyinto the DG area of rat′s hippocampus for demyelination induction. The animals received 30mg/kg caffeine for 7, 14 and 28 days after demyelination induction bylysolecithin.Histological assessment for demyelination and remyelinationextension was performed byusing myelinspesific staining (luxol fast blue). RT PCR for investigation of Olig2 geneexpression was carried out. Results: Based on histological study, most demyelination occurred in days 7 and 14 after lysolecithin injection. Remyelination was noticeable at 28 days post lesion. Caffeine consumption decreased demyelination. RT-PCR analysis indicated that lysolecithin injection increased expression of olig2 gene especially in days 7and 14 post lesionwhileChronic treatment with caffeineattenuatedolig2 gene expression that indicates caffeine is created more mature oligodendrocyt cells from progenitor cells. Conclusion: Our data demonstrates that caffeine treatment can exert a neuroprotection effect against demyelination and increases remyelination process.
Keywords :	Demyelination,Remyelination, Lysolecithin, Caffeine, Hippocampus