Original Paper

Effect of hydro-ethanolic extract of *Chamaemelum nobile* on cell prolifration and apoptosis of rat hipocample neural stem cells in the oxitative stress condition

Abdanipour A (Ph.D)*[1], Khatami SM (M.Sc)[2], Tiraihi T (Ph.D)[3], Satari MJ (M.D)[4]

[1]Assistant Professor, Department of Anatomy, Stem Cells Research Laboratory, Islamic Azad University, Ardabil Branch, Ardabil, Iran. [2]M.Sc in Biology, Young Researchers and Elite Club, Islamic Azad University, Ardabil Branch, Ardabil, Iran. [3]Professor, Shefa Neurosciences Research Center, Khatam Al-Anbia Hospital, Department of Pathology, Tehran, Iran. [4]Medical Student, Young Researchers and Elite Club, Islamic Azad University, Ardabil Branch, Ardabil, Iran.

Abstract

Background and Objective: Neural stem cells can difrentiate to mature neural cells. Neural stem cells can migrate and repair the damage neural tissue. This study was done to determine the effect of hydro-ethanolic extract of *Chamaemelum nobile* on cell prolifration and apoptosis of rat hipocample neural stem cells in the oxitative stress condition.

Methods: In this experimental study, neural stem cells were isolated from hippocampus of neonatal rat brain. Isolated neural stem cells were treated at 200, 400, 600, 800 and 1000 µg/ml of hydro-ethanolic extract of *Chamaemelum nobile* for 48h. Cells proliferation rate were evaluated by MTT assay. Anti-apoptotic property of hydro-ethanolic extract of *Chamaemelum nobile* evaluated using TUNEL assay method.

Results: Proliferation of neural stem cells were significantly increased in *Chamaemelum nobile* extract group in comparision with control ($P<0.05$). The rate of apoptotic cells were significantly reduced in *Chamaemelum nobile* extract group compared to control ($P<0.05$).

Conclusion: The hydrethanolic extract of *Chamaemelum nobile* increases proliferation rate and reduces apoptosis of neural stem cells in the oxitative stress condition.

Keywords: Neural stem cell, *Chamaemelum nobile*, Cell proliferation, Apoptosis

*** Corresponding Author: Abdanipour A (Ph.D), E-mail: abdani.anatomy@yahoo.com**

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