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MicroRNAs (20a, 146a and 155) and *Fork head box P3* genes expressions in a sample of Iraqi patients with multiple sclerosis

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Introduction: Multiple sclerosis is a devastating central nervous system autoimmune disorder that is characterized by a series of inflammations, demyelination and neurodegenerations that affect the brain and spinal cord. The epigenetic studies specially, micro ribonucleic acid expression represent an important field of researches that probably uncover the obscurities behind the multiple sclerosis pathogenesis.

Aim: The aims of the present work were to study the expression of micro ribonucleic acids (20a, 146a, and 155) and *Forkhead box P3* genes by real time polymerase chain reaction relative quantification technique on multiple sclerosis patients peripheral blood leukocyte and to correlate their expression according to different clinical parameters of multiple sclerosis disease.

Method: A case-control study was performed on 25 newly diagnosed untreated multiple sclerosis patients during their attendance to multiple sclerosis clinic in Baghdad Teaching Hospital in Baghdad Medical City as well as from the Neuro-medical Consultancy Unit in Al-Yarmouk Teaching Hospital in Baghdad city, in addition to 25 apparently healthy controls which were medical staff with no history of having any autoimmune disease or receiving any steroid or immunomodulatory therapy. This work was conducted during the period from 1st of April 2015 to 31st of March 2016.

Results: From a total of 25 multiple sclerosis patients, 23 of them were females and 2 were males with a female to male ratio (F:M) of 11.5:1. The ages of these patients ranged between 18-55 years, mean age was 33.32±9.45 years. Studying of micro ribonucleic acids expression revealed a significant down-regulation in micro ribonucleic acid-20a and *Forkhead box P3* gene while up-regulation of micro ribonucleic acid-155 expression in multiple sclerosis patients in comparison to controls. Micro ribonucleic acid-146a was directly associated with inflammation and multiple sclerosis disease activity.

Conclusion: In conclusion, multiple sclerosis is associated with significant changes in micro ribonucleic acids expression including micro ribonucleic acid-20a, micro ribonucleic acid-146a, and micro ribonucleic acid-155 as well as with a significant change in *Forkhead box P3* gene expression that can be measured by real time polymerase chain reaction technique.

Biography

Zainab Abdulelah Abduljawad Aljawadi has completed her PhD in Medical Microbiology and Immunology from Baghdad University, Iraq in 2017. She has completed her Masters in Medical Microbiology in 2012 and Bachelor of Medicine and General Surgery (MBChB) in 2006 from Mosul Medical College, University of Mosul, Iraq. She has also received certificates for molecular training including real time PCR technique and DNA microarray technique from Molecular Department in Specialty Hospital in Amman, Jordan and certificate for PCR training from Baghdad University.

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