EFFICIENCY OF SOME BIOCHEMICAL MARKERS IN DIAGNOSIS AND SEVERITY OF CEREBROVASVCULAR ACCIDENT

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ABSTRACT : Stroke is the most common type of damage brain tissues resulting from interruption of blood supply . It is divided into Ischemic Stroke and hemorrhagic Stroke. The high prevalence of the disease is very disabling and deadly that poses a serious hazard to of patients health. During or after the progression of a Stroke , pathogenesis of effect of many body products. Study of these parameters maybe helpful for determined the therapy and dose that could be given for patients, as well as to could work to prevent Stroke incidence and to reduce risk actors. The study aimed to assess Renalase, Copeptin, NT-proBNP and MMP-9 concentration levels in Ischemic Stroke patients, and show parameters correlation with severity of Stroke and National Institutes of Health Stroke Scale (NIHSS) in Basrah, Iraq. Our study included Forty two patient with Ischemic Stroke their age (42 to 63) years old. Our study included (20 males and 22 females) that admitted to Al-Sader Educational Hospital in Al-Basrah Government of Iraq, Between November 2019 and April 2020. A control group of forty healthy individuals, with no chronic diseases, no previous of Stroke and no excluded criteria of Stroke patients group. Control range of age were (48-62) years old, including (24 men and 16 women). Our study revealed a significant increase in Copeptin, NT-proBNP and activity of MMP-9 in the Stroke patients comparing to the control p-value <0.05. The results showed that Copeptin, Renalase, NT-proBNP, MMP-9 significant increase in severe Ischemic Stroke compared to moderate Ischemic Stroke group p-value (0.0012, 0.0069, 0.0094, <0.0001) respectively. The results revealed that there is a high positive significant correlation with each of MMP-9 and NT-pro-BNP (p-value = 0.0001), as well as a positive significant correlation with Copeptin (p-value = 0.006). Whereas the result showed a non significant correlation with Renalase (p-value = 0.097).

Key words : Stroke, NIHSS, copeptin, renalase, NT-proBNP, MMP-9.

INTRODUCTION

Stroke is the most common type of damage that affected brain parts resulting from interruption of blood supply. It is divided into Ischemic Stroke and hemorrhagic stroke. Over than 13.7 million cases of Stroke diagnosed newly every year. Globally, statistical studies found that one in four people whom over than 25 years old are susceptible to Stroke incidence (Turner, 2016). Ischemic Stroke s is interruption of blood supply and hypoxia which leads to cerebral infarction as known brain cells damage. Ischemic Stroke s leading to impairments in vision, body parts movement, and speaking (Alpert, 2017). Intracerebral hemorrhage is a sudden bleeding into the brain tissues caused by brain trauma, aneurysms, arteriovenous malformations or brain tumors resulting in clots formation and interrupts blood flow (Hamzah *et al*,

2019; Lattanzi, 2019). Approximately 10 to 30% of all Stroke s are hemorrhagic and have an estimated 40%-50% mortality rate (Go, 2013; Lattanzi, 2019). Although, developed hemorrhagic stroke s appears higher mortality than Ischemic stroke (Reinhardt, 2010). The NHISS considered a systematic standardized assessment designed to measure the neurologic deficits for acute Stroke patients, reliable for physicians clinical research and communication tool. NHISS can predict severity and Stroke outcomes. Depended on a focal neurologic exam to evaluate vision, sensation, movement and language. Scale severity can determine the protocol treatments type or treatments dose for acute Stroke that given rapidly to patients. Originally with possible scores ranging (0-42 point) (Ojaghihaghighi, 2017). As a result biochemical markers has been studied in many studies as diagnostic,