

8th European Neurology Congress

September 21-23, 2016 Amsterdam, Netherlands



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Diagnostic and Prognostic Significance of Blood Biomarkers in Acute Ischemic Stroke

Background: The utilization of biomarker panels in acute ischemic cerebral stroke (AICS) could enhance the proper diagnosis that facilitate the identification of the cause of the cerebral stroke which is essential for rationally manage and avoid stroke recurrence. Objectives: To inspect the vulnerable associations among a panel of blood biomarkers {D-dimer (DD), angiotensin-converting enzyme (ACE), S100 calcium-binding protein B (S-100b), and brain natriuretic peptide (BNP)} and AICS patients. Patients and Methods: This is a prospective research performed on patients with AICS who admitted at Saudi German Hospital-KSA in corporation with the neurology department Mansoura faculty of medicine - Egypt during one and half years' duration. Demographics of the patients, fatality as well as the clinic and a panel of blood biomarkers serum levels were gathered. The clinical scales {National institutes of Health Stroke Scale (NIHSS) scoring for severity on admission, and Modified Rankin Scale (mRS) for outcome after 3 months} were tested for all AICS patients. Results: An overall of 150 patients with AICS was investigated, with a mean age of 62 ± 14 years with males 52%. The AICS cases were set side by side to age and sex matched thirty healthy controls (HC) demonstrating that the patients were more likely to have significantly hypertension, and atrial fibrillation (71.3%, 20%, $P < 0.05$ respectively). The mortality after 3 months was 11% (15 cases). Regarding stroke severity NIHSS score mean was 11.6 ± 6 . The serum levels for a panel of blood biomarker (DD, S100b, and BNP) are significantly higher while for Angpt1 is significantly lower with AICS in comparison to HC. Multivariate predictors of patients with an unfavorable functional outcome, DD, S-100b, and BNP levels were significantly higher compared with the levels in patients with a favorable outcome. On the contrary, the level of Angpt1 is significantly decreased in patients with an unfavorable functional outcome. The stroke severity (NIHSS score) correlated significantly with the outcome (mRS) as less severe cases showed more favorable outcome. The clinical variables that showed significant correlation were age, diabetic, and atrial fibrillation. Conclusion: Our findings highlighted that blood biomarkers can be accustomed as a valuable tool to investigate AICS and to anticipate initial neurological outcome that would assist in determining patients at risk of unfavorable outcome offering alert to launch therapies to avert aggravating of the patient's status.

Biography

Mohamed ELSherif has completed his MD and PhD at the age of 38 years from Mansoura University School of Medicine, Egypt. He is the coordinator of postgraduate and undergraduate medical students. He has published more than 17 papers in reputed journals and has been serving as a reviewer member of many Neurology journals. Prizes first Best Master Thesis Mansoura University 2007, second Junior Travelling Fellowships from the World Federation Of Neurology 22/4/2009 to attend the 13th EFNS in Florence-Italy to present the poster of my MD thesis.

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