Journal of Vessels and Circulation

12th Iranian Congress of Stroke
December 2020

Evaluation of GRADIENT Echo (1,5 tesla) Sequence in Patients with CVA that Occurred up to 72 Hours

Ali Sadeghian Shahi[1], Abdorreza Ghoreishi[1]

[1] *Department of Neurology , vali-e-asr-Hospital, School of Medicine , Zanjan University of Medical Science, Zanjan, Iran*

Article Info

Article type:
Original article

Article History:
Received: 20 January 2020
Revised: 04 March 2020
Accepted: 14 May 2020

Keywords:
CVA
GRADIENT echo
GRE susceptibility vessel sign

A B S T R A C T

Background and Aim: based on various studies , GRE (gradient echo)(3 TESLA) can detect pneumobra and also shows the association of SVS with cardiac origin in GRE t2*(according totransesophageal echo),so we intend to consider the ability of GRE with 1.5 Tesla in the detection of pneumobra and also the association of SVS(susceptibility vessel sign) with atrial fibrilation For the first time,so, we evaluated the association of SVS with atrial fibrillation in patients with stroke who have been referred within 72 hours.

Materials and Methods: The statistical population consisted of 20 patients over the age of 18 years who referred to Valiasr Hospital in Zanjan with cva diagnosis , based on the absence of bleeding in BRAIN CT ,different MRI sequences Waere done for them.Due to the fact that this study was a pilot study, sampling method was in available sampling. Information from various BRAIN MRI sequences including DWI (diffusion-weighted imaging)/ GRE T2 * / ADC(apparent diffusion coefficient)/ T1 / T2 / FLAIR(Fluid-attenuated inversion recovery), presence or absence of atrial fibrilation and NIHSS(National Institutes of Health Stroke Scale)items were collected from clinical examination and ekg , and inserted to special chart for statistical analysis.

Results: A total of 20 patients with ischemic stroke were enrolled in this study, the mean of the infarction area was DWI = 65ml and the mean NIHSS = 9. GRE T2 *, 50% of patients with SVS and 50% had no SVS. Of the 20 patients, 35% had AF and 65% had not AF in the EKG. Of the 20 patients, 35% had subcortical lesions and 65% had cortical lesion in the DWI sequence. GRET2 * / DWI MATCH was seen in all 13 patients (65%) with cortical lesion in DWI and out of 7 patients (35%) who had DWI in subcortical lesion only In one patient, DWI / GR E T2 * MISMATCH was observed and there was no DWI / GRE T2 * MATCH or MISMACHT in 6 patients. There was no significant relationship between age and SVS and between gender and SVSand between AF and SVS. there was a significant relationship between SVS and infarct area in DWI , between SVS and NIHSS,between cortical lesion in DWI and SVS.,between the presence of subcortical infarction region in DWI and the absence of SVS and between the presence of RMHV and SVS.

Conclusion: Totally, there was a significant relationship between SVS and infarct volume in DWI and between SVS and NIHSS with p value = 0.001, also with p value = 0.003, there was a significant relationship between the presence of cortical infarction in DWI and the SVS sign, subcortical infarction area in the DWI and the absence of SVS and between the presence of RMHV and the SVS sign.

With pvalue = 0.057, there was no significant relationship between atrial fibrilation and SVS. However, due to the low power level of the study (67%), it is recommended that this study be repeated with higher volume, which seems to be significantrelationship between these, with increasing number of samples, and therefore probably In the presence of SVS sign in the GRE T2 sequence, the cause of stroke may be higher in the cardiac region, especially atrial fibrillation. Therefore, patients who have SVS symptoms but do not have atrial fibrillation in the ECG, are candidates for Holter monitoring.

Journal of Vessels and Circulation

12th Iranian Congress of Stroke

December 2020

J Vessel Circ, Winter 2021, 2(1): 61.