

## ELABORATION OF MULTIVARIATE MODEL FOR PREDICTION EARLY LETHAL OUTCOME AFTER SPONTANEOUS SUPRATENTORIAL INTRACEREBRAL HEMORRHAGE USING PARAMETERS OF COMPUTER TOMOGRAPHY

Kuznietsov Anton, Krilov Artem  
Scientific supervisor: prof. Kozyolkin O.A.  
Zaporozhye State Medical University  
Department of Nervous Diseases

**Background:** Elaboration of statistical models to predict early lethal outcome (ELO) after spontaneous supratentorial intracerebral hemorrhage (SSICH) is a very important and relevant in modern angioneurology that can help the practitioners to identify candidates for neurosurgical intervention and improve effectiveness of treatment approaches. We therefore elaborated new statistical for prediction ELO after SSICH using parameters of computer tomography (CT).

**Methods:** 74 patients (mean age  $62,9 \pm 1,4$  years) were studied within first 21 days after clinical onset of SSICH. Clinical examination included evaluation by National Institute of Health Stroke Scale (NIHSS). CT of the brain was done at admission during first 24 hours after clinical onset of AISS. The volume of intracerebral hemorrhage (VICH) was calculated by ellipsoid formula using parameters of CT:  $VICH (mL) = (a*b*c)/3$ . Displacement of a transparent partition (DTP) was verified (mm). Elaboration of prognostic model was made by logistic regression and ROC-analysis.

**Results:** Out of 74 stroke patients, 10 (13,5%) have dead. Near 15 models were obtained. The model with the largest area under the curve ( $AUC=0,856$ ) was:  $\beta = -0,02 * VICH + 0,27 * DTP - 3,6$ . Significance level of Hosmer-Lemeshow-test for selected model  $p=0,8533$ , percent concordant=89,2. Cut-off value of  $\beta > -2,29$  predicts ELO with sensitivity=90,0% and specificity=71,87%.

**Conclusions:** Elaborated prognostic model might be a powerful tool for predicting ELO after SSICH and improving effectiveness of treatment.

## PROGNOSTIC VALUE OF PERIHEMATOMAL EDEMA FOR PREDICTION EARLY LETHAL OUTCOME AFTER SPONTANEOUS SUPRATENTORIAL INTRACEREBRAL HEMORRHAGE

Kuznietsov Anton, Konovalova Daria  
Scientific supervisor: prof. Kozyolkin O.A.  
Zaporozhye State Medical University  
Department of Nervous Diseases

**Background:** Elaboration of computer tomographic criteria to predict early lethal outcome (ELO) after spontaneous supratentorial intracerebral hemorrhage (SSICH) is a very important and relevant in modern angioneurology that can help the practitioners to identify candidates for neurosurgical intervention and improve effectiveness of treatment approaches. We therefore verified the prognostic value of perihematoma edema for prediction ELO after SSICH.

**Methods:** 63 patients (mean age  $64,9 \pm 1,4$  years) were studied within first 21 days after clinical onset of SSICH. Clinical examination included evaluation by National Institute of Health Stroke Scale (NIHSS) and Glasgow Coma Scale. CT of the brain was done at admission during the first 24 hours after clinical onset of AISS. The cumulative volume of intracerebral hemorrhage (VICH) and perihematoma edema (PHE) was calculated by ellipsoid formula using parameters of CT:  $VICH+PHE (mL) = (a*b*c)/3$ . Elaboration of prognostic criteria was made by logistic regression and ROC-analysis.

**Results:** Out of 63 stroke patients, 10 (15,9%) were dead. Cut-off value of  $VICH+PHE > 92,3$  mL predicts ELO with sensitivity=80,0% and specificity=88,7% ( $AUC=0,85$ ). Significance level of Hosmer-Lemeshow-test for selected model was  $p=0,2653$ , percent concordant=90,5.

**Conclusions:** Cumulative computer tomographic parameter ( $VICH+PHE$ ) characterized by high sensitivity and specificity for prediction ELO after SSICH and may be used for elaboration of multivariate statistical model.