

Mixed hematoma density is an independent predictor both in Glasgow coma scale and Glasgow outcome scale in unilateral chronic subdural hematoma

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混合型血塊單側慢性硬腦膜下出血同時是昏迷指數及預後之獨立預測因子

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Purpose: The relationship between Glasgow outcome scale (GOS), Glasgow coma scale (GCS) and brain computer tomography (CT) findings in patients with unilateral chronic subdural hematoma (CSDH) are not consistent in studies.

Material and methods: Between Oct 2004 to March 2008, 123 CSDH patients were retrospective evaluated. 93 unilateral CSDH patients (73 male and 20 female; age range 51-91; mean, 71±11 years) were enrolled. The relationship between GCS on admission / GOS at discharge and the following variables on admission was evaluated including: sex; age; GCS; time interval from injury to admission; hematoma location, hematoma thickness, hematoma density relative to the brain, midline shift, ventricular sizes (evaluated by Evan's index, maximum diameter of third ventricle), and cortical atrophy (evaluated by cortical width) on brain CT scan.

Results: Using Chi-square or Fisher's exact and student's statistics analysis, it showed initial GCS ($P<0.001$), hematoma densities ($P<0.001$), ventricular Evan's index ($P=0.002$), and maximum diameter of third ventricle ($P=0.039$) were significantly associated GOS at discharge. Meanwhile, hematoma density ($P<0.001$) and hematoma thickness ($P=0.032$) were significantly with GCS. By multiple logistic regression models, the adjusted odd ratio (OR) in predicting the poor outcome was significant with initial GCS level <15 [OR= 11.2, CI= 1.3-96.9, $P=0.028$] and mixed density hematoma on brain CT [OR= 7.4, CI= 1.8-31.7, $P=0.007$]. At the same time, mixed density hematoma [OR=8.10, CI=2.84-23.10, $P<0.0001$] and hematoma thickness >23 mm [OR=0.26, CI=0.10-0.68, $P=0.006$] were significantly associated with GCS.

Conclusion Mixed hematoma density on admission is the only factor associated with a lower GCS and poor outcome in patients with unilateral CSDH. It can be used as independent predictor to predict the initial GCS on admission and GOS at discharge in unilateral CSDH patients.

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