

RISK FACTORS AND PROGNOSIS IN HEMORRHAGIC STROKE CASE STUDY

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Abstract: In the case of stroke pathology, cerebral hemorrhage has the greatest gravity, mortality over 30 days from onset, being estimated at 35-50% with more than half of the patients, dieing in the first two weeks from onset. Only 20% of patients are independent 6 months from the hemorrhagic stroke

Cuvinte cheie: AVC, hemoragia intracerebrală, C.T. scan

Rezumat: În cazul patologiei AVC, hemoragia intracerebrală are gravitatea cea mai mare, mortalitatea la 30 de zile de la debut fiind estimată la 35-50% din care mai mult de jumătate din pacienți decedează în primele 2 săptămîni de la debut. Doar 20 % din pacienți sunt independenți la 6 luni de la AVC hemoragic.

INTRODUCERE

Risk factors in cerebral supratentorial hemorrhage:

1. *High blood pressure* is the most important and the most adjustable risk factor. Approximately 75% of patients with ICH have prior high blood pressure. Some studies have pointed out which patients with high blood pressure have the highest risk to develop ICH: the ones who don't respond to blood pressure medication, patients under 55 years old, patients who are smokers.

CAA is responsible for 5-15% of ICH and more than 50% of patients are over 75 years old. Typically, it is a lobar hemorrhage in older patients. Low levels of seric cholesterol (under 160mg/dl) has been associated with ICH.

2. *Jatrogenic*

Chronic treatment with warfarin, rises the risk of ICH by 7-10 fold and is found in 10-12% of patients with ICH. The risk of ICH in connection with anti-platelet treatment and non-steroidal anti-inflammatory drugs is less understood. A meta-analysis of 16 randomized clinical trials, including 55.462 patients, has shown that aspirin treatment had been associated with a relative risk of hemorrhagic coma of 1.84. (p sub 0,001).

3. *Genetic factors.*

The most common familial genetic forms of CAA involve mutations of beta-amiloid protein precursors. Mutations COL4A1 lead to changes in the basal vascular membrane, by affecting type IV collagen and has been associated with cerebrovascular pathologies in humans, including perinatal ICH, ICH in adults, micro-bleeding, lacunar stroke and leukoariosis.

The presence of alleles E2 and E4 of Apolipoprotein E is associated with lobar hemorrhages and sometimes with CAA.

4. *Other risk factors*

Most studies have failed in trying to associate stroke with smoking and diabetes mellitus, whereas others have clearly proven the association between stroke and alcohol. Other described risk factors are migrenes, drugs like heroine, cocaine, ephedrine, pseudo-ephedrine.

Prognostic factors.

The most important prognostic factors are: The volume of the hematoma at diagnosis, as well as the degree of conscience impairment in that moment. With a volume of over

60 ml and a GCS under 8, in the case of profound supratentorial hematomas, mortality is 91%, within a period of 30 days and 71% if the hemorrhage is lobar. If the hematoma is imagined as having an ellipsoidal shape, than, ABC/2 can be used in order to calculate its volume, on the CT scan. It is done in the following way: the slice with the biggest diameter is selected, which usually corresponds to the nidus, the maximum measured length, represents A, whereas B represents the maximum, in cm, measured perpendicular on A. The depth of the hematoma, C, is calculated by multiplying the number of slices where the hematoma is visible.

Table no 1. The Hemphill ICH score

Component	Points
Glasgow Coma Scale	
3-4	2
5-12	1
13-15	0
ICH volume,ml	
>30	1
<3	0
Intraventricular hemorrhage	
Yes	1
No	0
Age,years	
>80	1
<80	0
Infratentorial origin	
Da	1
Nu	0
30-Day mortality at total points	
5	100%
4	97%
3	72%
2	26%
1	13%
0	0

From this perspective, the following have indication

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CLINICAL ASPECTS

for surgery:

- hematomas between 10-30ml
- the ones with a volume over 60 ml, CGS under 8, which are associated with a mortality of 91% in the first 30 days.

Other factors are: advanced age, associated intraventricular hemorrhage, associated infratentorial hemorrhage. A recent study has shown another important prognostic factor, meaning the rapidity of local bleeding, which is followed by volume growth of the hematoma.

Quantification of 30-day mortality can be achieved by applying the Hemphill scale.(See table). It uses predictive factors, useful mainly in family counseling, without involving therapeutic gestures, which, applied early and correctly, may contribute to prognosis improvement.

The final purpose of any therapeutic act is fast and complete socio-professional rehabilitation of the patient.

CASE STUDY

The patient, V. I., 52 years old, alcoholic, known with high blood pressure.

Date of admission: March 3rd, 2010.

Neurologic examination: left hemiparesis, GCS= 9 points

Figure no. 1. CT head exam: Right temporal intraparenchymal hematoma



Initially, a conservative treatment was attempted, but the CT exam performed in evolution, in March 10th, 2010, showed partial resorption of the hematoma.(fig 2).

Figure no. 2. Partial resorption of the hematoma

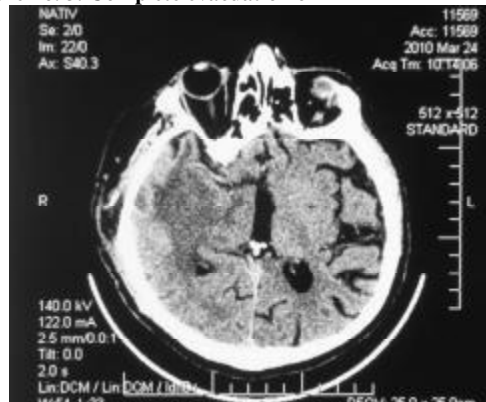


The surgical intervention(March 11th, 2010): Right temporal craniectomy. Complete evacuation of the ICH. Control CT exam: complete evacuation of IPH (fig 3)

Status at release from the hospital- neurologically

improved.

Figure no. 3. Complete evacuation of IPH



CONCLUSIONS

1. HTA, is the most important and the most adjustable risk factor.
2. Alcohol abuse is an important risk factor, in ICH.
3. If neurological status allows, conservative treatment may be initiated by first intention.
4. Surgical approach should aim to complete the evacuation of intracerebral hemorrhage and a perfect haemostasis.

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