26254 - MORTALITY PREDICTORS IN RUPTURED INTRACRANIAL ANEURYSMS IN ELDERLY PATIENTS

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INTRODUCTION:

The number of elderly patients diagnosed with aneurysmal subarachnoid hemorrhage (SAH) has been increasing as our senior population grows. Epidemiology, diagnosis, the anesthetic and surgical management of this condition has to be comprehensively evaluated (1). The objective of the present study is to determine the mortality predictors in elderly patients with ruptured aneurysmal SAH.

METHODS:

The charts of 165 patients (>65 years old) with ruptured aneurysms were reviewed after institutional IRB approval. All patients were admitted to the Toronto Western Hospital from 1993 to 1998. Data included in-hospital events and out-of-hospital follow up one month after discharge. Patients who did not have a repair procedure were excluded. Univariate analysis including Chi X2, Fisher exact and Mann-Whitney U tests were used to evaluate the hypothesis that death is associated with well-defined pre-, intra- and post-operative factors. A p-value <0.05 was considered statistically significant. Two individuals collected the data from paper or electronic charts.

RESULTS:

The total mortality rate was 18.78% (31/165). All patients had a repair procedure performed within 15 days of SAH. Pre-operative poor functional grading and critical radiological findings were significant predictors of death (Table). However, the timing of the intervention had no effect. Pre-operative co-existing diseases, intracranial vasospasm and urgent embolization were not associated mortality. Similarly the size and location of the ruptured aneurysm as well as the existence of other aneurysms were not associated with death. None of the recorded intra-operative factors, i.e. blood loss, aneurysmal rupture, temporary clipping and changes in mean arterial blood pressure ($\pm 20\%$) affected mortality. During the in-hospital post-operative period, the occurrence of intracerebral bleeding, brain infarct and a poor GOS on discharge from the ICU and the hospital were predictors of mortality (Table). Death was not associated with the occurrence of various other post-operative co-morbidities except multiple organ system failure.

DISCUSSION:

The results indicated that most perioperative predictors of mortality in intracranial aneurysm rupture in the elderly were related to the severity of the initial neurological and radiological findings. Such predictors seem to be beyond the control of the treating physicians. This may suggest that our efforts should be directed towards factors that increase morbidity so that patients who survive aneurysmal SAH may have a better quality of life.

REFERENCE:

Neurocritical Care 2005; 2: 119-123

TABLE: Mortality Predictors in elderly patients with intracranial aneurysm rupture

Predictor of mortality	p-value	Predictor of mortality	p-value
WFNS grade	0.0001	Postoperative brain hemorrhage	0.01
GCS grade	0.0001	Postoperative brain infarct	0.0001
Fisher grade	0.034	GOS on discharge from ICU	0.0001
Length of stay in ICU	0.038	Multi organ system failure	0.003

WFNS: World Federation of Neurosurgical Societies, GCS: Glasgow Coma Scale,
GOS: Glasgow Outcome Scale