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Risk Factors and Outcome After Intracerebral Hemorrhage in Latin Population

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Introduction:

Intracerebral hemorrhage (ICH) is the second most common form of Cerebral Vascular Disease (CVD)[1], it is associated with higher mortality (50%) and morbidity (42% disability adjusted to the years lost)[2]. In western countries, ICH represents 5- 20% of CVD, while in Latin population the frequency is from 23-40%.

Objetive:

To define the risk factors and outcome after ICH.

Methods:

Demographic data, vascular risk factors, and modified Rankin scale (mRs) were registered. Primary outcomes included mRs, recurrence and death at end of follow-up. Significance was defined as p<0,05 and also expressed as odds ratios (OR) and the 95% confidence interval (CI).

Results:

We included 5,891 cases with CVD; among these, 1,391 (24%) patients had ICH, data was collected prospectively from November 1978 to October 2017. Patients were followed for a median of 43 months. Mean age was 51 ±18,2 years and there were 723 males (51%). Hypertension was the major risk factor (55%) followed by diabetes (15%) (Table 1). Hypertensive etiology was 55% followed by arteriovenous malformation 11%.

Location: deep 45%, lobar 36% and posterior fossa 14%. Mortality rates were increased in patients with dyslipidemia (OR=1,72, 95% CI=1,01-2,94). Mortality rate was 36% and recurrence 14% (Table 2). Poor outcome (mRs>3) was found in 67% of patients (Table 3).

Conclusion:

ICH occurs at a younger age in our population, it confers higher morbidity and mortality. Hypertension is the major risk factor and etiology. The implementation of control of risk factors would improve the outcome in the ICH.

Table 2. Clinical outcome

Baseline characteristics	Female	Male
Clinical outcome		
NIHSS initial	13.3	13.8
NIHSS final	7.4	7.6
Modified Rankin Score discharge	3.6	3.8
Modified Rankin Score at end of follow-up	3.5	3.8
Follow-up, months (median, IQR)	46.3	39.7
Recurrence	81 (12%)	111 (15%)
Deaths	221 (32%)	289 (40%)
Epilepsy	9 (1%)	16 (2%)

Table 1. Baseline characteristics

Variable	Female 668 (49%)	Male 723 (51%)
Age, years (median, IQR)	47 (18)	46.7 (19)
Risk factors		
Hypertension	350 (51%)	423 (42%)
Diabetes	99 (14%)	113 (16%)
Smoking	167 (24%)	504 (70%)
Dyslipidemia	89 (13%)	119 (16%)

Table 3. Modified Rankin Score (mRs), recurrence and death at the end of follow-up

Variable	Rankin >3		Recurrence		Death	
	OR (95%CI)	*P* value	OR (95%CI)	*P* value	OR (95%CI)	*P* value
Male	**0.73 (0.58-0.91)**	**0.006**	0.73 (0.54-1.00)	0.05	**0.71 (0.57-0.88)**	**0.002**
Smoking	0.93 (0.72-1.20)	0.59	1.1 (0.8-1.63)	0.47	0.90 (0.70-1.16)	0.418
Dyslipidemia	0.72 (0.42-1.23)	0.22	0.91 (0.47-1.78)	0.78	1.72 (1.01-2.94)	0.045
Previous ICH	**0.016 (0.05-0.54)**	**0.001**	**0.16 (0.08-0.31)**	**0.000**	0.69 (0.36-1.33)	0.26

References:
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2. de Ridder I, Kuramatsu J, Gerner S, et al. No sex differences in long-term functional outcome after intracerebral hemorrhage. Int J Stroke. 2016 Nov 3;0(0):1–5.