

# LOW VERSUS STANDARD DOSE OF INTRAVENOUS THROMBOLYSIS WITH ALTEPLASE IN ISCHEMIC STROKE PATIENTS OLDER THAN 80 YEARS OLD: AN OBSERVATIONAL STUDY

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## Introduction

Intravenous thrombolysis is the only validated medical treatment for reperfusion in the acute phase of stroke. Despite its efficacy, intravenous thrombolysis increases the risk of cerebral hemorrhage by a factor of 4. The increased risk of intracranial hemorrhage appears to be correlated with the age of the patients. A dose reduction of intracranial thrombolysis to 0.6mg/kg did not demonstrate superiority over the standard dose.

## Objectives

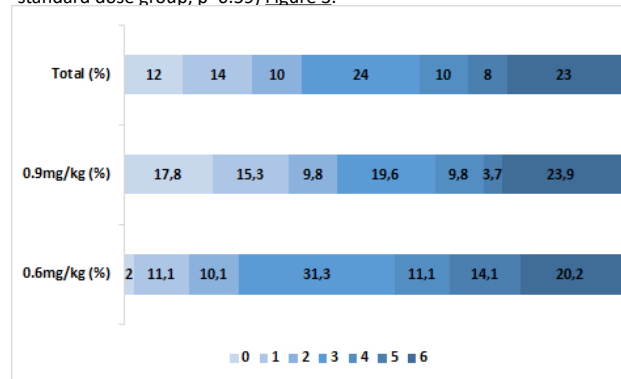
This observational study aimed to evaluate functional outcome at three months in elderly ischemic stroke patients  $\geq$  80 years old treated with either standard-dose (0.9 mg/Kg) or reduced-dose (0.6 mg/Kg) of intravenous thrombolysis with rt-PA.

## Materials & Methods

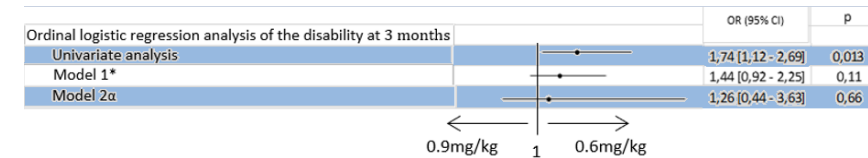
We performed a retrospective analysis of data from two hospital-based registries conducted in the University Hospitals of Dijon and Bordeaux, France, between January 2016 and December 2018. These registries included patients aged  $\geq$  80 years old who were hospitalized for acute ischemic stroke and who received intravenous thrombolysis with rt-PA (alteplase). Functional outcome at three months was assessed using the modified Rankin scale score and was compared between two groups (standard versus low dose of rt-PA) using ordinal logistic regression analysis. Rate of symptomatic hemorrhagic transformation was also compared between the two groups.

## Results & Discussion

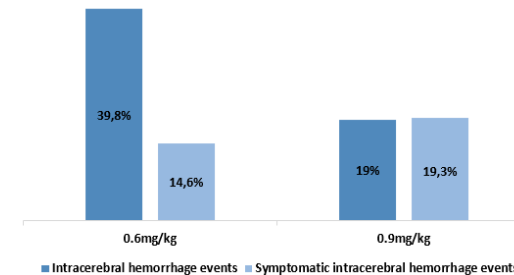
Of the 266 patients included in this analysis, 163 patients received a standard dose of rt-PA and 103 patients received a reduced dose. In this study 36% of the total population had a modified Rankin score between 0 and 2 at 3 months (43% in the standard-dose group and 23% in the low-dose group) **Figure 1**. No association between dose of rt-PA and functional outcome at three months was observed (adjusted OR=1.26; 95% CI: 0.44-3.63,  $p=0.66$  for comparison low versus standard dose) **Figure 2**. No significant difference was noted with regard to rates of symptomatic hemorrhagic transformation (14.6% in low dose group versus 19.3% in standard dose group,  $p=0.59$ ) **Figure 3**.



**Figure 1 :** Functional Outcomes at 90 Days, According to Score on the Modified Rankin Scale.



**Figure 2.** Effects of Low-Dose Alteplase as Compared with Standard-Dose Alteplase on the modified Rankin scale (mRS) score at 3 months according to adjusted analyses.



**Figure 3.** Distribution of Intracerebral Hemorrhage (ICH) and Symptomatic Intracerebral Hemorrhage (SICH) rates after stroke thrombolysis in the low-dose (0,6mg/kg) and in the standard-dose (0,9mg/kg) Alteplase groups.

## Conclusions

This study suggested no differences in functional outcome at three months in elderly ischemic stroke patients who received either standard or reduced dose of intravenous rt-PA. Further studies are needed to determine the best early recanalization strategies in these patients, especially those with comorbidities and frailties.