A regional emergency stroke network yields a high rate of thrombolysis.
The Resuval (Rhône Valley, France) thrombolysis registry.

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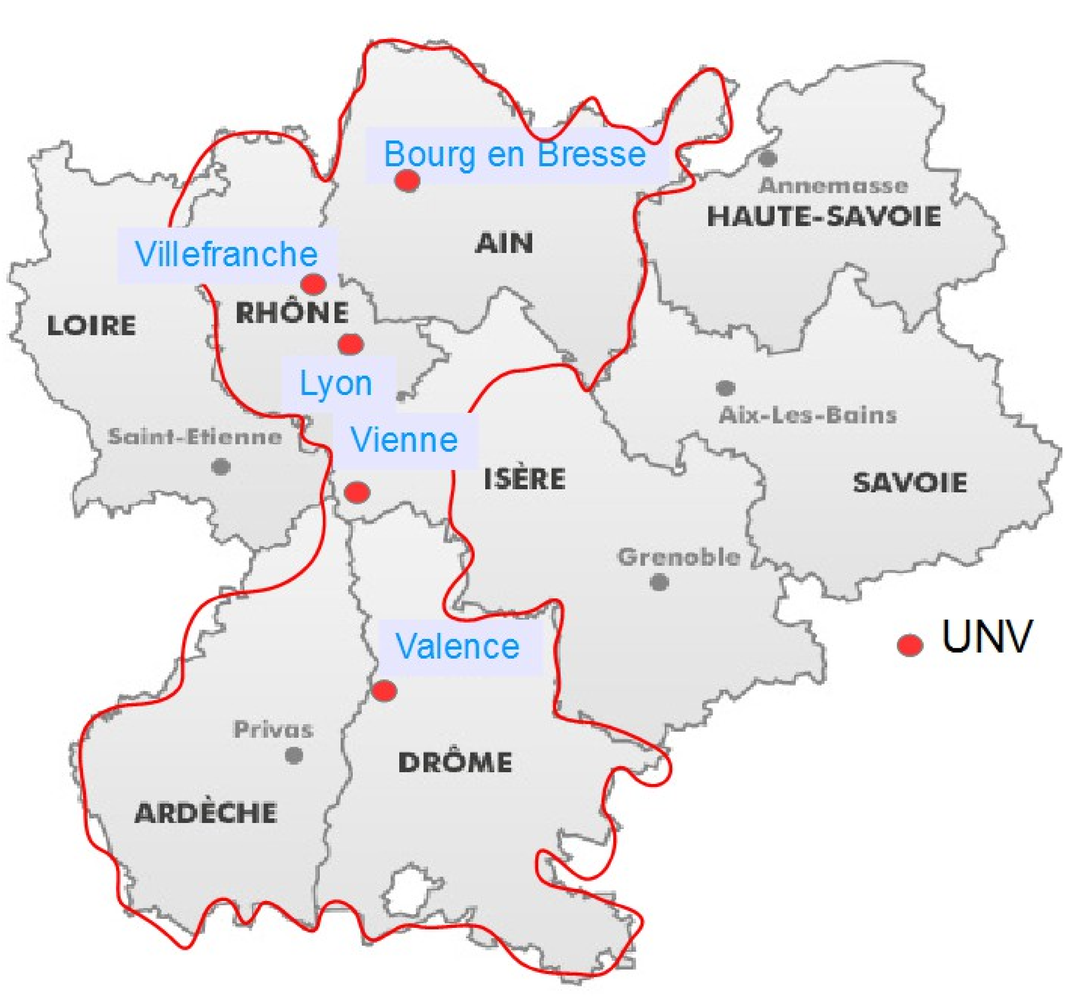
BACKGROUND

We present the first data following the establishment of a regional emergency stroke network in the Rhône Valley, France (Resuval stroke network) covering a population of 3 million people.

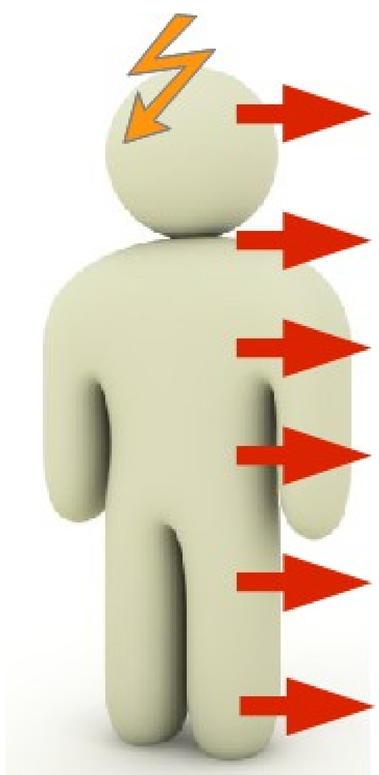
This network focuses on dense regional stroke unit coverage and on the establishment of a standardised protocol for pre-hospital management with high priority of emergency transport, and neurologist and radiologist pre-notification of the arrival of a suspected stroke victim. Admission to one of the five stroke units, multimodal MRI and CT are available around the clock.



METHODS

We prospectively evaluated all patients receiving thrombolysis or thrombectomy for acute ischaemic stroke (AIS) in the network from October 1, 2010 to June 30, 2012.

RESULTS



Six hundred fifty-six AIS patients have received urgent reperfusion treatment (96% intravenous thrombolysis, 2% combined intravenous and intra-arterial thrombolysis, and 2% thrombectomy alone). During the observation period, a total of 7 193 AIS occurred in the population covered by the network (thrombolysis rate: 9.1%).

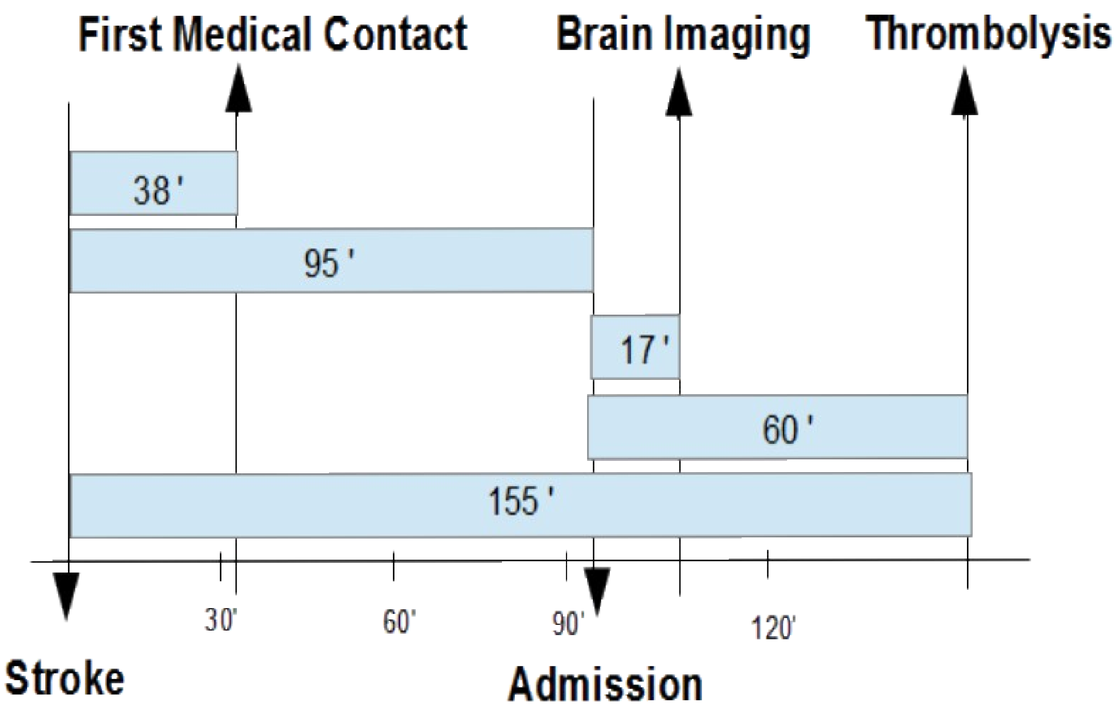
Median age of patients who received reperfusion therapy was 73 (161 patients≥ 80 years – 24.5% of all thrombolytic treatments). Fifty-five % were men.

Median distance from the place of stroke to the stroke unit was 19 km. Initial reaction was direct activation of Emergency Medical Services in 76% of cases. Patients were transported by EMS or Fire Department ambulances in 65% of cases. Eighty-three % of patients were primarily referred to a hospital with stroke unit on site. Median baseline NIHSS score was 11.

Pre-treatment multimodal MRI was performed in 74% of cases (CT was performed in the remaining 26%). The rate of proximal arterial occlusion was 41% (Internal carotid artery: 13%, M1 middle cerebral artery: 24%, basilar artery: 4%).

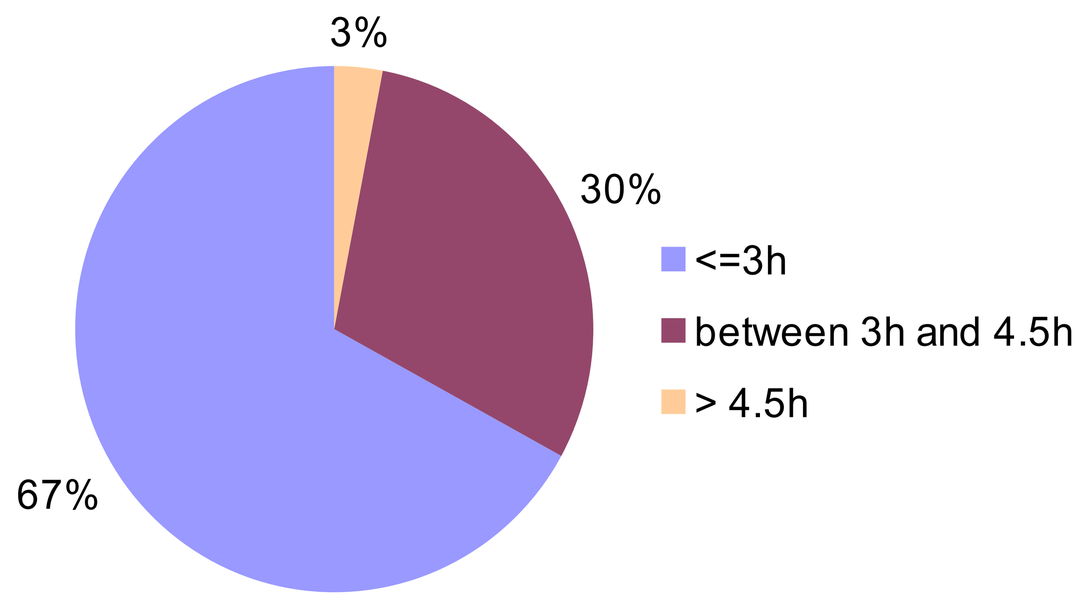
Median time from stroke onset (SO) to first medical contact was 38 min, from SO to admission: 1 h 35 min, from admission to brain imaging: 17 min, from SO to thrombolysis: 2 h 35 min.

Median time from stroke onset to thrombolysis



Sixty-seven % of patients were treated within the first three hours and 30% between 3 h and 4.5 h. Fourty-two% of patients were treated off-label mainly because of age> 80 years (69% of off-label thrombolysis) or oral anticoagulant treatment (13%; median INR on admission = 1.3).

Therapeutic window of thrombolysis



The rate of symptomatic haemorrhage (ECASS criteria) was 3.5%. At 3 months, 41% of patients had a modified Rankin Scale (m-RS) score ≤ 1 and 54% had a m-RS score ≤ 2. Mortality rate was 17.6%.

CONCLUSION

The establishment of a regional emergency stroke network yields high rates of early stroke unit admission, thrombolysis (9%) and 54% good functional outcomes.
The upcoming reginal telestroke project should hopefully improve the delays and thrombolysis rate.

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