EARLY MANAGEMENT OF STROKE: THE L'AQUILA STROKE NETWORK

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Objectives and Purpose: Our aim has been to analyse the stroke course,at the extra and intra-hospital level, in order to detect the factors to be addressed to improve the Stroke Network.

Materials and methods: A consecutive series of 220 patients admitted to the L'Aquila Stroke-Unit in 2014 have been analysed. Onset of symptoms, time of arrival to hospital, management in the Emergency Room as well as eligibility criteria for thrombolytic treatment have been taken into consideration to evaluate adequacy to the Local Management protocol and to detect the causes which prevented thrombolytic therapy from being administered.

Results: About 77.7% of patients were discharged with an ischemic stroke diagnosis, 9.1% were discharged with an Intracerebral Hemorrhage diagnosis, and 13.2% were discharged with a TIA diagnosis. **(Fig. 1A)**
Predominant risk factors were FA, Arterial Hypertension, Carotid Stenosis, Diabetes, followed by other risk factors like Dyslipidemia, Smoke, Chronic Cardiopathy and in minimum percentages Hyperhomocysteinemia, Cardiolipin Antibodies, Antiphospholipid Antibodies and Patent Forame Ovale.
These outcomes highlight, in consistency with the literature, that the two main causes of stroke are atherosclerotic disease and heart disease (FA, Patent Forame Ovale, Valvular diseases). Such evidence is confirmed also by TOAST classification, in which 25.9% of patients is classified under LAA, 18.6% under CE, 10.5% under SVD, and 32.7% under NE which, however, includes also those cases presenting heart diseases and carotid stenosis simultaneously for which it was not possible to attribute cases in one of the two categories specifically. **(Fig. 1B)**

The study has shown that, regarding patients with "ischemic stroke" diagnosis, 48.5% of them came at the Emergency Room late, after 4,5 hours since symptoms onset, while 51.5% of them arrived on time. **(Fig. 2A)**

In patients "on time" only 10% underwent thrombolytic treatment, while reasons for which treatment was not given in 41.5% of them were the presence of contraindications.

Regarding patients arriving late at Emergency Room, 5.6% of them in addition to delay revealed other exclusion criteria, while the remainder 43.3% could have been subject to thrombolytic therapy having no contraindications. Moreover, taking into consideration patients coming late, more specifically 13.4% were POCI, 11.7% LACI, 1.8% TACI and 21.6% PACI. It is clear that, in most cases, there is a symptomatology belonging to either a posterior circulation (13.4%), for which a patient (mostly without clinical knowledge) is hardly able to recognize stroke symptoms; or symptoms belonging to an anterior circulation (21.6%) - i.e. motor or sensitivity isolated disorders – for which a patient tends to underestimate its symptomatology. **(Fig. 2B)**

Regarding patients that uderwent thrombolytic treatment, no hemorrhagic event occurred; according to OCSP classification, 54% of them were PACI, 23% LACI and 23% of them TACI. Moreover there was a NHISS average improvement of 5 points for patients subject to thrombolysis. **(Fig. 3)**

Conclusion: Delay of patients arrival to hospital was the main reason for therapy withdrawal. Campaign to increase population awareness are very needed. In our setting, the Stroke Network worked properly at an intra-hospital level, while it must be improved at extra-hospital level. Hence, it is necessary to raise people awareness about stroke treatment and symptom recognition.

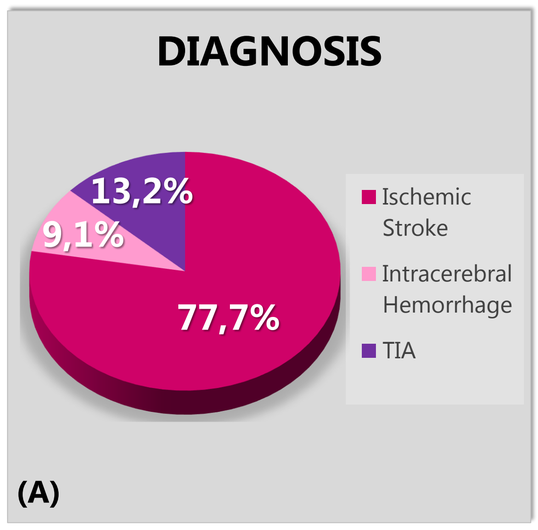

Fig. 1: A) Percentages of Diagnosis in the Stroke Unit of L'Aquila in 2014. B) Patients classified according to TOAST Classification.

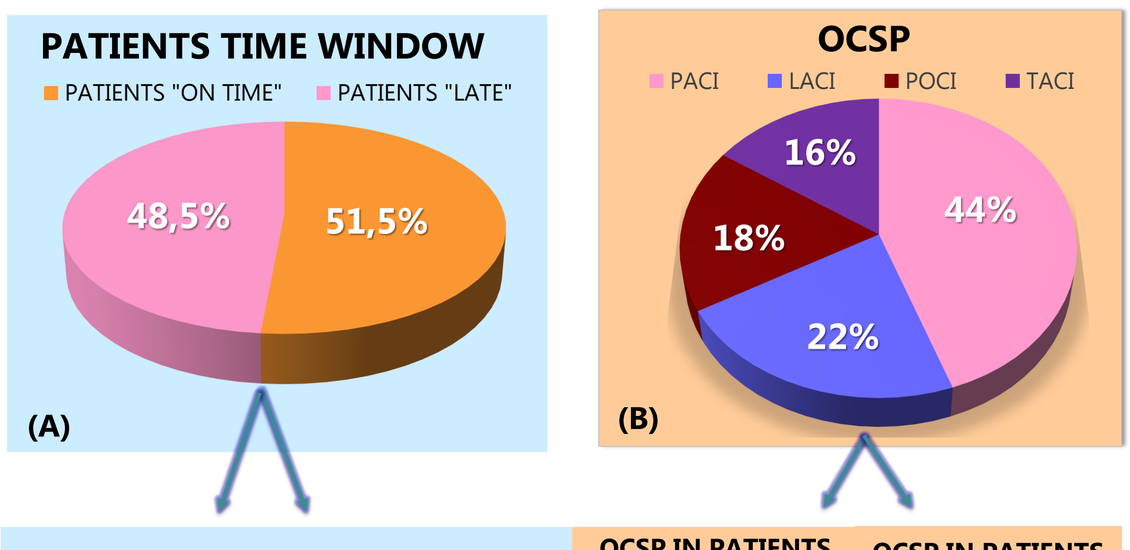

Fig. 2: A) Patients Recovering in the Stroke Unit of L'Aquila in 2014 and contraindications in patients "on time" and "late". B) Patients classified according to OCSP Classification.

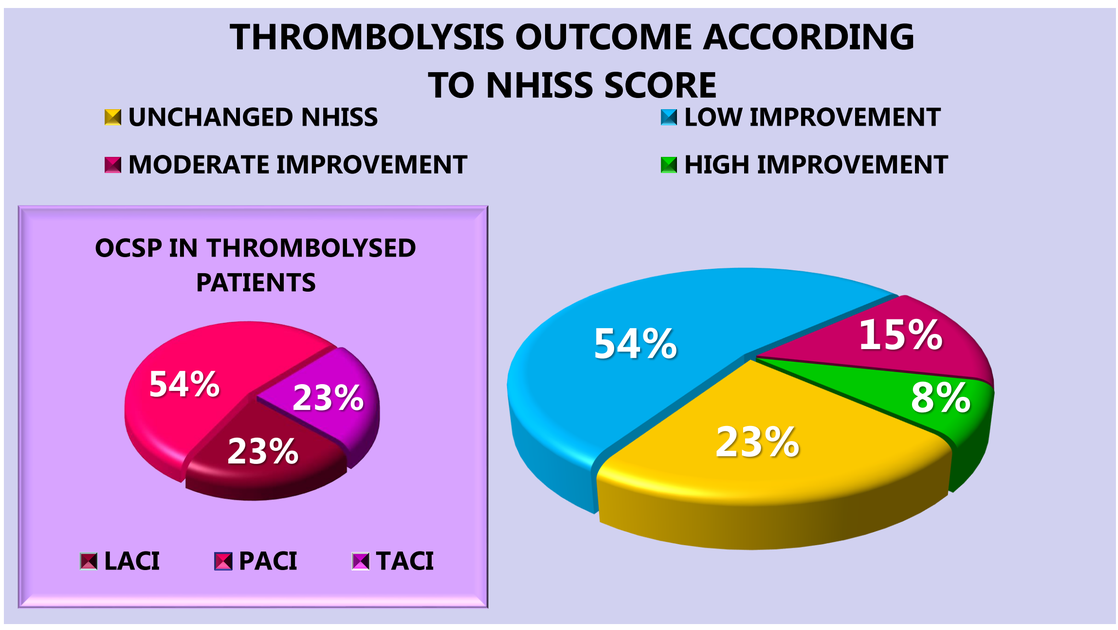

Fig. 3: Thrombolysis Outcome.

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