

## **Adaptive performance of the Tuscany Stroke Network to the COVID 19 outbreak: a retrospective study.**

Baldereschi M, Orlandi G, Bellomo F, Chiti A, Nencini P, Palumbo P, Martini G, Linoli G, Inzitari D, for the The TSN Working Group\*

**AIMS.** The COVID 19 pandemic is impacting on acute ischemic stroke (AIS) care: fewer patients reach the hospital within the therapeutic time-window. We aim at quantifying this impact in terms of number of treatments, as well as exploring the Tuscany Stroke Network (TSN) adaptive performance.

**MATERIALS AND METHODS.** The TSN was implemented in 2015 and it is structured as three hub-and-spoke models throughout Tuscany. AIS patients are first taken to the nearest spoke hospital for possible t-PA treatment, assessed for eligibility to endovascular intervention, and quickly transferred to the nearest hub hospital, where appropriate. We included all patients with AIS consecutively treated in each of the 9 hospitals of the north-western region of the TSN during the first semester of 2020, using the same period from 2019 as a comparator.

**RESULTS.** The network spans across 6000 Km<sup>2</sup> with 1,3 million inhabitants, 3260 AIS expected cases, 1 hub hospital and 8 spoke hospitals. From January 1 through June 30 2020, a total of 227 treatments were administered to AIS patients, being 238 during the same period of 2019. In particular, there were 9% fewer t-PA treatments (194 vs 214), but 37.5% more endovascular interventions. There were also 24% fewer secondary transfers to hub. Single hospital performances varied a lot.

**DISCUSSION.** The TSN could adapt very quickly to the COVID-19 outbreak. Some hospitals took over AIS patients from other overwhelmed hospitals, redirecting EMS transportations. The logistic interventions provided by the TSN counterbalanced the deleterious effects of the COVID 19 outbreak on AIS care.

**CONCLUSIONS.** Our data suggest both the need and the benefit of organized stroke systems. Only a well-established hospital network can adjust its organization and logistics to quickly and effectively deal with an unexpected health problem.

\*TSN-Working-Group: Baldereschi, Balzi D, BaruffiMC, Bellomo F, Bertini A, Bollani E, Bracco S, Carneglia L, Caruso A, Cesari V, ChitiA, Chitil, Colombai R, ContiA, Cosottini M, CozzaS, DeVito L, DelDotto P, DiFabrizio V, DonigagliaG, Fainardi E, Ferrini L, Fortini A, Frosini F, Galli R, Gambaccini G, Iannelli G, Inzitari D, Landini G, Laureano R, LencioniMG, Linoli G, LuchiniG, Mancuso M, MandòM, MangiaficoS, Marconi R, Marrone A, Martelli F, Martini G, Masotti L, Mazzoni M, Menichetti C, Meucci G, Nencini P, Niccolini A, Nocentini S, Orlandi G, Orsitto E, Palumbo P, Panigada G, Pennati P, PepeG, PratesiM, ProsettiD, RuggianoG, ScazzeriF, Spisni L, Spolveri S, Tassi R, Testa A, Tognarelli, Torri T, Vannini R, Vignali C, Volpi G.