A461 - Intracranial hemorrhage after thrombolysis for ischemic stroke: life threatening complication or irrational fear?

G Karlis 1; N Magkas 2

1General Hospital of Rodos, Intensive Care Unit, Rodos, Greece, 2Ippokrateion General Hospital, Department of Cardiology, Athens, Greece

Introduction:
The NINDS study in 1995 established intravenous thrombolysis (IVT) with recombinant tissue plasminogen activator (rt-PA) within 3 hours of symptoms onset as the treatment of choice for acute ischemic stroke (AIS). The time-window for administering IVT was expanded to 4.5h after the results of the ECASS-3 trial in 2008. To date intravenous rt-PA remains the only approved systemic therapy for AIS with proven efficacy in resolving neurological deficits and improving functional outcomes. Nevertheless, only a very small proportion of AIS patients (2-3%) are treated with thrombolysis. The most feared complication of IVT is intracranial hemorrhage (ICH). ICH is a potentially fatal adverse event, thus an exhaustive list of contraindications has been implemented in stroke guidelines to minimize the risk and to assist the selection of patients that will gain the most of the benefit from IVT. On the other hand the application of such a stringent protocol can be discouraging and may reduce the number of patients that could possibly benefit from the treatment.

Methods:
We performed a comprehensive review of the recent literature regarding the hemorrhagic complications of rt-PA in AIS with emphasis in ICH. The electronic database of PubMed was searched to retrieve publications of relevant original studies. We reviewed articles from January 1995 to October 2017.

Results:
Symptomatic ICH ranged from 2.4% to 11% in randomized trials with the usual rt-PA dose of 0.9mg/kg. In studies respecting the 4.5h window the rate of ICH did not exceed 7.3%. There is no study showing significantly worse mortality rate for patients treated with rt-PA.

Conclusion:
Underutilization of IVT despite the overwhelming evidence that support the effectiveness of such therapy can be partly attributed to the fear of hemorrhagic complications. This fear is not justified by current data. The estrangement of the emergency medicine community regarding IVT and the domination of stroke experts in decision making is also a barrier.