

Thrombolysis, Community Hospitals, and Primary Stroke Center

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There have been major advances during the past decade in stroke diagnosis, prevention, and treatment. Of these, intravenous tissue plasminogen activator (tPA) is currently the only approval medical therapy for acute ischemic stroke within a 3-hour window^(1,2), and is recommended by most acute stroke treatment guidelines, including Taiwan Guidelines for the Management of Stroke⁽³⁾. Postmarketing surveys have demonstrated that intravenous tPA can be administered appropriately in a wide variety of hospitals setting. Recently, a large observational study (SITS-MOST) showed that intravenous tPA is safe and effective in routine clinical use for acute ischemic stroke within 3 hours, even by hospitals with little previous experience of thrombolytic therapy for acute ischemic stroke⁽⁴⁾. However, many neurologists and emergency department physicians still have safety and efficacy concern about the use of thrombolysis for acute ischemic stroke because of the risk of hemorrhage and the small proportion of suitable patients. In a survey of U.S. emergency department physicians, 40% responded that they were not likely to use tPA for acute ischemic stroke, largely because of the risk of intracerebral hemorrhage⁽⁵⁾.

To increase the administration rate and safety of tPA use depend mostly on an acute stroke team 24/7, brain CT available 24/7, an intravenous tPA protocol around the clock, and intensive care and monitoring. All the above are essentials of the primary stroke center⁽⁶⁾.

Establishment of a primary stroke center at a community hospital has been shown to be able to significantly increase the tPA use⁽⁷⁾. A survey of stroke center status in Taiwan, in 2006, showed that less than 1% of ischemic stroke patients received thrombolytic therapy, and the number of thrombolytic therapy administration was significantly correlated to the stroke center criteria⁽⁸⁾. Acute stroke patients often arrive at the community hospitals earlier than the tertiary medical centers. Community hospitals have the higher opportunity to salvage the ischemic brain of the acute stroke patients. There is no reason that thrombolytic therapy could not be implemented routinely in the community hospitals. The article published in this issue of *Acta Neurologica Taiwanica* by Hsu et al gives a valuable contribution in this regard⁽⁹⁾. The authors have analyzed the results of 43 acute ischemic stroke patients receiving intravenous tPA therapy at a community hospital. The functional outcome of their treated patients was comparable to that of the previous NINDS trial. This information may aid in the effort of enhancing thrombolytic therapy and establishing primary stroke centers in the community hospitals.

But there are some limitations and weakness in this study, so that the results have to be inferred cautiously. This study is retrospective, and scaling the functional status at 3 months may be biased toward favorable outcome. Besides, the authors may address how to decrease

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in-hospital delays (door-to-needle time) and increase the percentage of eligible patients with acute ischemic stroke receiving thrombolytic therapy. Even though, the rate of tPA administration in the authors' hospital increased prominently from 0.2% in 1998 to 1.6% in 2007. The Taiwan Stroke Society established the requirements for primary and comprehensive stroke centers during 2006~08, and the certification of stroke centers in Taiwan will be conducted in 2009. Enhancement of thrombolytic therapy in acute ischemic stroke is highly expected after more fulfilled primary stroke centers, particularly in community hospitals.

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