



Compare the therapeutic results of between the chemical and mechanical intra-arterial thrombolysis.

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Introduction

Intravenous administration of tissue plasminogen activator (iv-tPA) is accepted as a standard treatment for acute cerebral stroke, but the clinical outcomes cannot be warranted in patients who are not recanalized after iv-tPA or not indication for iv-tPA. Recently intra-arterial thrombolytic therapy (IA-Tx) reported good results. But, clinical outcomes was not compared who treated IA-Tx by chemical and mechanical methods. Authors analyze the IA-Tx sub-group end results.

Methods

154 patients were divided into a chemical thrombolysis group (n=92: Urokinase, Rheopro, etc) and mechanical thrombolysis group (n=62: Solitair, balloon, other devices). Mechanical thrombolysis groups were sub-divided according to whether used Solitair or not. And other clinical data sub-analyzed by tPA used or perfusion/diffusion mismatch (P/D-mismatching) or not. Treatment results were compared by recanalization rate, clinical outcomes, mortality, and significant intra-cerebral hemorrhage rate.

Results

Recanalization rate was 58.% in chemical thrombolysis group and 79.0% in the mechanical thrombolysis group (?2, $p < 0.05$). Favorable outcome (modified Rankin Scales score of 0–2), mortality and significant intra-cerebral hemorrhage were similar in the two groups(?2, $p > 0.05$). And sub-group of mechanical thrombolysis group shows that recanalization rate was better in Solitair group but clinical outcomes shows no statistical difference (?2, $p > 0.05$). Complications such as clinical significant intra-cerebral hemorrhage and cerebral edema happened more frequent in chemical group (?2, $p > 0.05$). P/D-mismatching checked just before the IA-Tx, was constant significant prognostic indicator in our analysis (?2, $p < 0.05$).

Conclusions

In our study, mechanical thrombolysis group shows better recanalization rate and best in Solitair group compared with chemical thrombolysis group. But clinical outcomes show no difference in all treatment group. While P/D-mismatching was constant significant prognostic indicator in our analysis. So IA-x might be applied as additional treatment modality for patients with DWI/PWI mismatching.

Learning Objectives

Although, mechanical thrombolysis is definitely improve the recanalization rate of major vessel occlusion. But end neurologic outcomes (mRS at 90 days after treatment) should be compared in a systemic approach. We need another therapeutic approach system, such as dynamic brain image to evaluated the vascular status and applied tailored therapeutic treatment method.

References

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