Fibrinolytic therapy stroke guidelines

The acute adult stroke diagram summarizes all steps for the evaluation and treatment of ischemic stroke according to the AHA guidelines. The following pages will review the suspicious stroke algorithm step by step. You can start here: Click the Stroke Algorithm diagram to begin a step 1 review of the Step 1 Stroke Algorithm protocol or the AHA stroke protocol. You can also download and review the Suspicious Adult Stroke Algorithm Diagram before continuing. Download Stroke Diagram (This opens in a new window.) Step 2 Stroke Algorithm protocol Step 3 Stroke Algorithm protocol Step 4 Stroke Algorithm protocol Step 5 Stroke Algorithm protocol Step 6 Stroke Algorithm Protocol Step 7 Stroke Algorithm protocol Step 8 Stroke Algorithm Protocol Step 9 Stroke Algorithm Protocol The purpose of stroke maintenance is to minimize brain damage and prevent neurological problems. Quickly identifying the symptoms of stroke and sning out quick treatment can improve prognosis and maximize patient recovery. Fibrinolithic therapy can be a life-saving treatment for stroke. It can also reduce the lasting effects of strokes, which can often lead to permanent injuries. Fibrinolithic therapy works by dissolving clots that block blood flow to the brain. Patients must be over the age of 18 and diagnosed with ischemic stroke in order to be considered as a suitable candidate for treatment. Although fibrinolithic therapy may be the recommended treatment, in some cases the risks outweigh the benefits and the treatment is contraindicating. A detailed assessment of the patient's condition and medical history is an important part of determining whether fibrinolithic treatment is appropriate. There are several absolute and relative contraindications for fibrinolithic treatment. For obvious reasons, absolute contraindication for fibrinolithic therapy is evidence of intracranial bleeding in CT screening. In addition, since intracranial bleeding is also a possible complication of fibrinolithic therapy, cases that increase the risk of bleeding can also be seen as phybrinolithic treatment contraindications. For example, if the patient has a previous history of stroke in the last three months, it may increase the risk of bleeding and exclude them from treatment with fibrinolitics. If a patient has a clinical picture that considers subarachnoid bleeding such as severe headache, orbital pain, vision loss and dizziness, treatment with a fibrinolithic agent, even with a normal CT scan, cannot be recommended. Previous subaratoid hemorrhage is also considered contraindications. Recent head trauma or brain or intraspinal surgery may also increase a person's risk of suffering an intracranial hemorrhage and exclude a patient from treatment. Additional contraindications include arterial puncturation in an uncompressable area in the previous period Patients with signs of active bleeding are also usually removed from fibrinolithic therapy. Another risk of fibrinolitic therapy is systemic bleeding, so some conditions that increase the risk of systemic bleeding are relative contraindications. This includes acute bleeding diathesis with less than 100,000 platelets. Patients with uncontrolled hypertension and with systolic blood pressure greater than 180 mm Hg or diastolic greater than 110 mm Hg may also be excluded. Blood sugar levels are also taken into account. A lesser glucose concentration of 50 mg/dL is considered contraindications. Watch: Fibrinolithic Treatment Checklist Relative Contraindications Relative contraindications mean that the patient may have a specific condition that puts them at higher risk of developing a complication, but the benefits of treatment can outweigh the risks. According to the American Heart Association, patients with one or more relative contraindications can still be considered candidates for fibrinolithic treatment. If there are relative contraindications for fibrinolitic treatment in the stroke patient, attention should be taken to the extent of stroke symptoms as well as the overall health of the patient. A relative contraindication is rapidly improving stroke symptoms. The patient's stroke may seem like a small one or call for a decision where symptoms are quickly resolved. If the symptoms are mild, possible complications from treatment may not be at risk. If neurological disorders are pronounced after seizures and seizures in the patient when symptoms begin, the patient may not be considered a good candidate for fibrinolithic treatment. Because of the fact that it can be difficult to tell the difference between postictal Todd's stroke and ischemic stroke since the clinical presentation may be similar. A myocardial infarction in the previous three months may also exclude a patient from fibrinolithic therapy. Additional relative contraindications include major trauma or surgery or recent gastrointestinal bleeding in the previous two weeks. This is due to increased risk of bleeding. Although recommendations for fibrinolitic treatment include the application of symptoms within three hours from the onset, in some cases the symptom can be given up to 4.5 hours from the onset. According to the AHA, carefully selected patients who received fibrinolithic therapy within 3 to 4.5 hours after the onset of symptoms also have good clinical outcomes. Since this is outside the window of an ideal time frame for treatment, there are additional (and more restrictive) exclusion criteria, including those over the age of 80, who have a severe stroke and have a history of diabetes before having a stroke. Oral anticoagulant taking is also a contraindication regardless When treatment is considered in the range of 3 to 4.5 hours INR. Renew ACLS Algorithms Article Sources Juach, E. Cucchiara, B. 2010 Guidelines of the American Heart Association for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Roaming. Accessed August 2014, 2010. Intravenous thrombolytic therapy for the first 3 hours after the onset of stroke was first completed in 1995 and reported together with 3 National Institute of Neurological Disorders and Stroke (NINDS) tissue plasminogen activator (tPA) studies have been shown to be useful. [3] Ninds Trial 1 and NINDS Trial 2 together randomized within 3 hours from the onset of stroke 624 subjects to take intravenous tPA or placebo 0.9 mg / kg and found a significantly better chance of functional independence with at least or no disability after treatment of patients treated with tPA within 3 hours from the onset of 3 months. The proportion of patients with the least obstacles or no injuries increased with placebo from 38% to 50% with tPA with 12% absolute improvement. The number required for 1 patient to be a normal or near-normal outcome was 8, and the number needed for the treatment of 1 patient for a better outcome was 3.1. [4] TPA-related brain hemorrhas caused severe worsening in 1% of patients. [5] Overall, 32 out of every 100 patients treated within the first 3 hours had better outcomes and 3 had a worse outcome. An independent reanalysis of NINDS studies has shown a robust treatment effect in favor of tPA. [6] Four other phase 3 IV tPA trials, ECASS 1, ECASS 2, ATLANTIS A and ATLANTIS B, recorded small subsets of patients in a 3-hour period. The benefit rating of lytic therapy under 3 hours observed in these studies is consistent with those found in 2 NINDS trials. [7, 8] The use of tPA for acute ischemic stroke was approved in 1996 by the U.S. Food and Drug Administration (FDA) and later by regulatory agencies in Canada, Europe, South America and Asia. The positive results of randomized clinical trials were generally replicated in phase 4 studies that examined the use of intravenous tPA in routine clinical practice. [9, 10, 11] These studies have documented positive results and symptomatic bleeding rates (see complications) similar to the original NINDS tPA trials in medical centers that made institutional commitments to provide acute stroke treatment. The largest study of actual clinical practice evaluated 23,942 patients treated in 650 centers in more than 25 countries and found the rate of consolidations and positive outcomes in NINDS tPA studies. [11] These findings show that tPA is effective when included in clinical trials as well as in clinical trials. exclusion guidelines are being protected. Lost time is the brain lost in acute cerebral ischemia. A typical moderate cerebral artery ischemic stroke, 2 million nerve cells disappear every minute in which reperfusion has not been achieved. [12] A poolanalysis of 3670 patients enrolled in the first 8 intravenous tPA trials provided clear and convincing evidence of a time-related benefit of thrombolytic therapy. [7, 13] Treatment in the first 90 minutes of the onset increased the chances of an excellent outcome 2.6 times, 1.6 times over a 91-180 minute period and 1.3 times over a period of 181-270 minutes, the treatment in a statistically significant way over a period of 271-360 minutes did not improve the outcome. The sooner TPA is given to patients, the greater the benefit. Every 10 minutes when treatment is delayed, one in 10 patients treated has benefits. [14] The European Cooperative Acute Stroke Study 3 (ECASS 3) trial was carried out to confirm or confirm findings from early studies suggesting the benefit of IV tPA therapy over a period of 3 to 4.5 hours. In ECASS 3, 821 patients were randomized to iv tPA or placebo. Major symptomatic bleeding occurred in 0.2% of the placebo group in 2.4% of the tPA group, while mortality was not increased. Patients treated with TPA had a much better chance of functional independence after 3 months of treatment without minimal or no disability. The proportion of patients with the least obstacles or no injuries increased with placebo from 45% to 52% with tPA with an absolute improvement of 7%. The number required for 1 patient to be a normal or near-normal outcome was 14, and the number required for the treatment of 1 patient for a better outcome was 8. In general, 16 out of every 100 patients treated within a 3-4.5 hour period have better outcomes and 3 have a worse outcome. [2] The positive results of ECASS 3 studies with pool in a 3-4.5 hour period were repeated in a wide range of phase 4 studies examining the use of intravenous tPA in routine clinical practice. In the International Safe Practice of Stroke Treatment (SITS) prospective registry, 2376 patients were regularly treated within a 3-4.5 hour period in 650 centers from more than 25 countries. Complication rates and positive results were similar to those in ECASS 3. These findings confirm that tPA is effective in clinical practice because it is effective in clinical trials within a 3-4.5 hour period in which inclusion and exclusion guidelines are protected. [15] In May 2009 and march 2013, American Heart Association/American Stroke Association (AHA/ASA) guidelines for the application of recombinant tPA (rtPA) after acute stroke were revised to increase the treatment window from 3 hours to 4.5 hours to provide an opportunity to benefit more patients. this is effective treatment. [16, 15, 17, 18, 19] This has not yet been FDA approved. A study by Kim et al looked at the rate of decline in the benefit of intravenous tPA therapy as the initial-to-treatment period in patients with acute ischemic stroke grew. Although 20 to 270 minutes after the start, the rate of discharge, discharge, independent ambulation in discharge and disability freedom in discharge were best for patients treated within the first 60 minutes, the rate of decrease in returning home was not mildly linear. There was a linear rate of decline in independent ambulation and hospital deaths. [20] Patients eligible for treatment with rtPA within 3 hours of the onset of stroke should be treated as recommended in the 2007 guidelines. [21] Although it has been formally tested for treatment with RTPA for a longer period of time, delays in evaluation and initiation of treatment should be avoided because the opportunity for recovery is more with earlier treatment. rtPA should be applied to eligible patients who can be

treated within 3-4.5 hours after the down (Class I Recommendation, Evidence B level). Eligibility criteria for treatment within 3 to 4.5 hours after acute stroke are similar for treatment in previous periods, With any of the following additional exclusion criteria: all patients with oral anticoagulants over the age of 80, patients with an international normalized rate (INR), 25 patients with a history of both stroke and diabetes > 25 meta-analysis presented at the American Stroke Association (ASA) International Stroke Conference (ISC) significantly improve the results of thrombolytic treatment of ischemic stroke, regardless of patient age or severity. [22] Intravenous studies of other fibrinolytic agents in clinically selected patients are consistent with tPA trial results, but no other proven agents have yet been identified. Three trials of streptokidaz were predominantly 4.5-6 hours of time, in which tPA is not beneficial over a period of time when the patient is registered and tested at a high dose of lytic agent. These studies found the net benefit of high dose, late IV lytic therapy. A pilot trial of tenekteplas in a 3-hour time frame suggested the potential safety and benefit ratio greater or equal to tPA. [23] A phase 3 study of Logallo et al. involving 1,100 patients with ischemic infusion assigned random tenekteplas, 0.4 mg/kg bolus or alteplase, 0.9 mg/kg infusion within 4.5 hours of onset of symptoms. The study found excellent functional results for patients in 354 (64%) tenekteplass groups and 345 (63%) patients in the alteplase group (modified rankin scale score 0-1 in 3 months). The study concluded that tenekteplase is not superior to alteplase, and A similar safety profile and further study is needed to determine the efficacy of patients with severe stroke. [24] The collective results from intravenous thrombolytic studies show a clear and consistent pattern. Patients treated with moderate doses of intravenous thrombolysis within 3 hours after the onset of stroke symptoms benefit significantly from treatment despite a modest increase in symptomatic bleeding rate. Patients treated in a 3 to 4.5 hour window show modest, but still clinically valuable, therapeutic efficiency. 4.5 hours after the start, the net benefit of treatment has been shown. Current U.S. and international consensus guidelines recommend intravenous thrombolysis, which accordingly can be initiated within 3 hours of the onset of treatment stroke, the most established treatment duration. [21, 25] In one study, thrombolytic agent desmoteplase, a fibrin-dependent plasminogen activator, was given between 3 h and 9 h and evaluated after symptom onset in patients with congestion or high-grade stench in large cerebral arteries. The study concluded that treatment with desmoteplase did not cause safety concerns and did not improve the functional outcome given to patients with ischemic stroke and major cerebral artery obstruction. [26, 27] A large study of more than 23,000 patients treated with tPA in the U.S. national registry confirmed that there was no increased risk of bleeding in the treatment of patients with INR levels subtherapeutic (< 1.8). [28] Several phase 2 and a phase 3 trial have used multimodal CT or MRI to identify selected 3-9 hour postonset patients who are still likely to port significant recoverable tissue and benefit from late intravenous treatment. [29, 23] This strategy looks extremely promising but has not yet been definitively confirmed by the positive phase 3 trial. A study presented at the XXIII European Stroke Conference (ESC) also found that using computed tomography (CT) to display the amount of dead tissue in the brain may also be an indication of who benefits most from thrombolysis. When making treatment decisions, further studies are needed to assess whether CT is a stronger predictor than calculations. [30, 31] Intra-arterial (IA) thrombolic was also investigated as an acute ischemic stroke treatment. Compared to intravenous therapy, IA therapy offers several advantages, including a higher concentration of lithic agents to the clot target, lower systemic exposure to the drug and higher rates of recanalization. Disadvantages include the additional time required to start treatment, not only availability in special centers, and mechanical manipulation within potentially injured vessels. Phase 3 Prolyse in acute cerebral thromboembolysis II (PROACT II) study reported in 1999, Within 6 hours from the onset of stroke 180 subjects 9 mg intra-arterial pro-urokinase (Pro-Uk) and heparin or intravenous heparin to take alone. Middle cerebral artery occulation has been documented in all subjects. The rate of recanalization was significantly higher for the pro-UK group than for the control group. In addition, pro-UK treated subjects have improved significantly 90 days after they came down at the predetermined primary trial endpoint. [32] Although the pro-UK group had a higher symptomatic ICH rate, overall mortality rates were equal in 2 treatment groups. This single positive phase 3 trial was not enough evidence to win FDA approval, and is not pro-available for treatment in the United States of England. However, reports of major case series show that the results of IA therapy using other fibrinolithic agents (e.g., tPA, urokinase, reteplaze) were approximately obtained with pro-UK in the proact II trial. Most recently, intra-arterial urokinase was investigated until 6 hours after the start of the Central Cerebral Artery Embolism Local Fibrinolithic Intervention Trial (MELT) 114 trial. Positive trends indicated significant benefits observed at the rate of good functional outcome and excellent functional outcome. As a result, intra-arterial fibrinolithic therapy is usually administered as an off-label treatment for stroke in the third centers within 6 hours from the onset of pre-circulation and up to 12-24 hours after the onset of posterior circulation. [33] Additional promising thrombolytic strategies examined in pilot studies include: Combined intravenous and intra-arterial thrombolysis, IV starting speed and IA high rescanalization rates combined with [34] Combined IV and/or IA thrombolysis endovascular mechanical clot retrievalation or aspiration, the ability of mechanical devices to eliminate large proximal clot loads, early initiation of treatment of lytics (IV lysis) or cleaning smaller blockages in distal arteries that do not have access to mechanical attack (IA lysis) [35] Ultrasonography-enhanced thrombolysis, using high frequency ultrasonography to accelerate enzymatic fibrillation by increasing penetration of drug molecules into clots [36] alonso de Lecinana et al.'s prospective, An observational study found that in patients with large vascular obstruction stroke, due to comorbidity, intravenous thrombolysis is contraindicating, primary mechanical thrombektomy is a safe alternative. The study involved 21 contraindiced patients who had primary mechanical thrombektomy and 131 patients with large vascular obstruction treated within 4.5 hours after symptom onset, including 110 patients without contraindication and who received intravenous thrombolysis. In the second group, 53 patients were Because the oc illusion continued. While no symptomatic intracranial bleeding was seen in any patient in the primary mechanical thrombektomy group, 6% (three patients) were detected in the intravenous thrombolysis and intravenous thrombektomy group. Mortality rates in the two groups were 14% (3 patients) and 4% (2 patients) respectively. [37] [37]