

## **Understanding the Risks and Benefits of Treatment of Acute Ischemic Stroke with *tissue Plasiminogen Activator (tPA)***

### **What is a stroke?**

Stroke occurs when a blood vessel is ruptured (hemorrhagic stroke) or becomes blocked (ischemic stroke) causing a region of brain injury.

### **What happens in acute ischemic stroke?**

In an acute ischemic stroke, the blood flow to a part of the brain is interrupted because of sudden blockage of a blood vessel. The blockage is usually due to a blood clot which starves the brain of needed oxygen and nutrients. The center of the starved area may die quickly, and the surrounding area may die slowly over hours.

### **What is tissue plasminogen activator or tPA?**

TPA is a clot buster. The idea is to return blood flow to the region of the brain undergoing injury. If the clot is dissolved soon enough, some or all of the brain may be rescued from the threatened injury. Rescuing brain that was starved may decrease the amount of disability that results from the ischemic stroke. One research study demonstrated that, overall, patients given tPA within three hours of ischemic stroke onset had less disability three months later than patients not given any treatment.

### **Do all stroke patients get this treatment?**

No. Specific criteria are used to identify those patients most likely to benefit and to avoid serious side effects. If a stroke patient does not fulfill all of those criteria, the risks of therapy are probably higher and the chance of benefiting probably lowers.

### **What are the potential benefits?**

The potential benefits are related to reducing disability after recovery from stroke. According to the NINDS tPA trial, if stroke patients received tPA their chance of having little or no disability is 30% greater than those getting sugar pill (placebo) alone. Even though the chances of a good outcome are improved, *over half of the stroke patients who are given tPA will still have disability from their stroke. A good outcome is not guaranteed.*

### **What are the potential risks?**

The major risk of tPA therapy in stroke patients is that they may bleed into the injured area of the brain, causing a worsening of their condition and even death. The chance of serious bleeding into the stroke area is less than 0.6% in stroke patients not treated with tPA versus approximately 6% in those who do get tPA. Of those who bleed after tPA, about one half will die. However, overall, death rates are unchanged at three months if you did or did not receive tPA.

### **Why should someone receive tPA?**

It is the only FDA approved clot buster for acute ischemic stroke. It offers the best opportunity for reduction of disability after stroke in those patients who qualify.