Thrombolytic therapy in stroke patients with cancer.

Adam Kerestes; Angela McCall-Brown, MSN, APN, RN; Sheila Da Silva, RN; Shalini Bansil, MD*
Overlook Medical Center, Atlantic Health System Summit, NJ.

Introduction and objective: Although there are clear contraindications to rtPA treatment for ischemic stroke, some patient specific issues may arise that leave the clinician uncertain about the advisability of treatment. Questions remain about the efficacy and safety of thrombolysis in patients with current malignancies. Malignancy may cause ischemic stroke due to atherosclerosis, hypercoagulable states or effects of chemotherapy. There have been two reports of the use of thrombolysis in patients with stroke who have cancer. In general, patients with malignancies have been excluded from clinical trials of thrombolysis and stroke. We assessed the effects of rtPA in our stroke patients who had a malignancy.

Methods: We report our experience with thrombolysis in all five patients with stroke and a current malignancy (malignancy diagnosed within the past 6 months, patients with metastatic disease, or patients receiving treatment for cancer) that we treated from 2006-2011. Data was extracted from our stroke database.

Protocol approvals: The study was approved by the Institutional Review Board of Atlantic Health System.

Conclusion: We believe these results, when considered in combination with other studies indicate that thrombolytics may have positive effects on stroke patients with comorbid malignancy. In four of the five patients treated with rtPA, improvement was seen with no symptomatic hemorrhage. This suggests that malignancy in patients presenting with a stroke should not be a contraindication for IV rtPA. The mechanism of stroke in four of our five patients was probably a hypercoagulable state suggested by the presence of DVT in three patients discovered early after the stroke or in ambulatory patients and thus unlikely to be related to immobility. In one patient a hypercoagulable state could be inferred by a history of pulmonary embolism. Atrial fibrillation was likely the cause of stroke in the fifth patient. Patients with metastatic cancer may, in general, have a poor prognosis and life expectancy. The occurrence of a stroke may significantly worsen the QOL. Thrombolysis, if it improves neurological outcomes, would enhance QOL. Further studies are needed regarding treatment with thrombolytics in patients with stroke and malignancies. These conditions are likely to occur together more commonly as the population ages.

Patient 1: A 52 year old female presented to the ED 170 minutes after the onset of neurological symptoms. She had a history of lung cancer with bony metastasis and was receiving chemotherapy. On exam she had an expressive aphasia and right hemiparesis. NIHSS was 12. CT of the brain was normal. A MRI of the brain was performed to rule out metastasis and revealed an acute infarct in the left MCA territory. (Figure 1). Platelet count was 57,000/nL. Upon completion of testing the patient was within the 4.5 hour window. IV rtPA was administered. The next day the NIHSS was 6. A CT scan 24 hours post rtPA revealed a large left MCA infarct with petechial hemorrhage. The day after admission she was found to have bilateral DVT in her legs. Rankin score was 1 at 3 months.

Patient 2: A 77 year old male presented to the ED 75 minutes after the onset of speech difficulty, right facial drooping and choking on his saliva. He had a history of pancreatic cancer with liver metastasis and was receiving chemotherapy. On exam he had a dysarthria, a right facial palsy, right gaze palsy and a right hemiparesis. NIHSS was 8. CT scan of the head was normal. IV rtPA was administered. The next day he was found to have a DVT in his left leg. MRI of the brain, the next day revealed bilateral cerebral infarcts and a right cerebellar infarct (Figure 2). He improved with an NIHSS score of 0 at discharge.

Patient 3: A 56 year old male presented to the ED 100 minutes after the onset of right hemiparesis and aphasia. He had a history of bladder cancer with metastasis to the liver and lung and had received chemotherapy. He had a history of pulmonary embolism. The NIHSS was 7. CT scan was normal, however an MRI revealed an acute infarct in the left MCA distribution (Figure 3). IV rtPA was administered. The next day the NIHSS was 4 but he developed a cerebellar hemorrhage for which neurosurgical intervention was necessary. Three days later he had another ischemic stroke and expired.

Patient 4: A 64 year old male presented to the ED with speech difficulty and right arm heaviness. He had a history of hypertension, atrial fibrillation, and pancreatic cancer. He was not on anticoagulants. Neurological exam revealed aphasia and the NIHSS was 3. IV rtPA was administered. The next day the NIHSS was 2 and he developed a cerebellar hemorrhage for which neurosurgical intervention was necessary. He was discharged home on warfarin. Rankin score was 0 at 3 months.

Patient 5: A 77 year old male presented to the ED with aphasia and right sided weakness. He had a history of hypertension, prostate cancer, and chronic lymphatic leukemia. NIHSS was 15. CT head and platelet count were normal. IV rtPA was administered. He showed rapid improvement. MRI imaging, the next day, revealed a left MCA infarct. NIHSS on discharge home was 4 and he was fully ambulatory. Two weeks later he developed a right thalamic stroke and was found to have a patent foramen ovale and a DVT. Rankin score was 1 at 3 months.