Initial Experience with the use of Intravenous Eptifibatide Bolus During Endovascular Treatment of Intracranial Aneurysms

Michael Horowitz, MD
Background

- Thromboembolic event rate = 5-20% during coil embolization procedures
- Currently heparin is used to avert ischemic complications (ACT 250-300)
- Asymptomatic DWI hits noted on MRI in 60% of patients post-coiling
Purpose

• To determine the feasibility of the use of GP IIb/IIIa antagonists in the setting of coil embolization

• Future goal of studying the safety/efﬁcacy of GP IIb/IIIa antagonists for endovascular treatment of aneurysms
GP IIb/IIIa Inhibitors

1) Abciximab:
   - 50,000 daltons
   - High receptor Affinity
   - Half life = 12-24 hours

2) Eptifibatide
   - 500 daltons
   - Low receptor Affinity
   - Half-life 2-4 hours
Eptifibatide Versus Abciximab

- Eptifibatide has theoretical advantages for coiling versus abciximab
  - Shorter half-life
  - Rapid reversibility with platelets/FFP
  - Lower rate of immune response (less antigenic)
  - Lower rates of thrombocytopenia
Methods

- From 8/01-11/04 298 coil embolizations performed
- Eptifibatide used in 84 (28%) procedures – Given as one time bolus
- 74 patients with 79 aneurysms (5 re-treated)
- 32 ruptured aneurysms/47 unruptured
Methods (Cont'd)

• Retrospective review of charts, radiographic imaging to document
  – Bleeding events (groin or intracranial)
  – Thrombembolic events (Angiographic branch occlusion or CT new infarct)
Methods (cont'd)

- Reasons for infusion of eptifibatide
  1) Neuroform Stent Placement
  2) Broad Neck
  3) Large aneurysm size
  4) Re-coil of aneurysm
  5) Coil prolapse/fracture
Results

• For 77 of 84 procedures, eptifibatide given prophylactically
• The other 7 patients had evidence of a branch occlusion prior to administration of drug
• The clinical thromboembolic event rate was 1 of 77 patients (1.3%) (10% incidence in a prior study at our center in cohort of 215 patients)
Results

• Overall 5 bleeding complications (5.9%)
• Two patients developed intracranial hemorrhage both were in the ruptured group = 6.3% for ruptured group and 0% unruptured group (4.7% in 215 non integrilin patients)
• Three patients with groin hematomas requiring transfusions
Conclusions

- Infusion of eptifibatide is feasible for coil embolization of aneurysms.
- The safety profile appears favorable for unruptured aneurysms, requires study in ruptured aneurysms.
- Further study needed to determine if thromboembolic rates lowered.
Next Study Underway

- Review patients with ruptured aneurysms who underwent implantation of Neuroform stents, aneurysm embolization, and Integrilin infusion
- N=42