Stroke, Atrial Fibrillation, and Anticoagulation

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Disclosures

♦ Consulting:
  • Glaxo Smith Kline, protocol development

♦ Research:
  • Glaxo Smith Kline: Co-National PI GSK DEPHINES – TAA trial
  • WL Gore: Local PI Gore REDUCE PFO Closure Trial
  • NIH:
    – U01-DK060990 (Prospective renal insufficiency cohort, stroke endpoint adjudication committee)
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Overview

- Types of intracranial hemorrhage (ICH)
- The intersection of ICH and atrial fibrillation
- Stroke type and use/timing of anticoagulation
Stroke

Brain injury due to a vascular blockage or rupture

Two kinds of stroke:

Ischemia (lack of blood flow) = 75-80%
Hemorrhage (ruptured blood vessel) = 20-25%
Ischemic and Hemorrhagic Strokes

- Ischemic Stroke
- Hemorrhagic Stroke
- Venous Thrombosis

Hemorrhagic Conversion of Ischemia
Outcome of ICH Compared to Ischemic Stroke

- **Mortality**
  - 6-month, 30-50%
  - 1-year, 50%

- **Only 20% of ICH patients are independent at 6 months vs 60% of ischemic stroke patients**

Intracranial Hemorrhage

- Intraparenchymal (intracerebral)
- Subarachnoid
- Vein Thrombosis
- Subdural
- Epidural
Intraparenchymal Hematoma
Intraparenchymal Hematoma
Intraventricular Hematoma
Subarachnoid Hemorrhage
Hemorrhagic Conversion of Ischemia
Should we give this patient heparin?
Epidural Hematoma
Subdural Hematoma
Intracranial Hemorrhage and Atrial Fibrillation

- Primary risk of AF is ischemic stroke
- Optimal treatment is anticoagulation
- AC increases risk of ICH

Congestive heart failure
- Hypertension
- Age ≥ 75
- Diabetes
- Stroke
- Vascular disease
- Age 65-74
- Sex
- Category

Hypertension
- Abnormal renal and liver function
- Stroke
- Bleeding
- Labile INRs
- Elderly
- Drugs or alcohol
Stroke Type and Anticoagulation

- **Ischemic Stroke**
  - Due to AF, requires long term AC
  - When to start?
    - Depends on size of infarct, presence of hemorrhagic conversion

- **Primary ICH**
  - Hypertension – Maybe eventual AC, if BP well controlled
  - Amyloid angiopathy - #NeverAC

- **Other causes of hemorrhage**
  - Hemorrhagic conversion of ischemic stroke – Sure! Eventually…
  - Major trauma – Sure! Eventually…
  - AVM – Sure! If treated…