

# Stroke In Women

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# Acute Ischemic Stroke

- ◆ Over 750,000 new cases/yr
- ◆ There is 1 stroke every 53 seconds
- ◆ 3rd leading cause of death
- ◆ over 150,000 death/yr
- ◆ 1st leading cause of adult disability
- ◆ Greater than 4.5 million stroke survivors
- ◆ Most preventable of catastrophic conditions

# The Cost of Stroke

- ◆ \$40 billion dollars/yr
- ◆ 35% related to lost wages
- ◆ 53% related to hospital/ECF costs
- ◆ 6% home healthcare costs
- ◆ 5% physicians fees
- ◆ 1% medication costs

# Causes of Stroke

- ◆ 80% Ischemic
  - 20% Embolic
  - 50% Small vessel
  - 30% Cryptogenic
- ◆ 20% Hemorrhagic

# Important Signs and Symptoms of Stroke

- ◆ Sudden numbness or weakness of the face, arm, or leg, especially on one side of the body
- ◆ Sudden confusion or trouble speaking or understanding
- ◆ Sudden trouble seeing in one or both eyes
- ◆ Sudden trouble walking, dizziness or loss of balance or coordination
- ◆ Sudden severe headache with no known cause

# Stroke Risk Factors Unique to Women

- ◆ Migraine disorder
- ◆ Pregnancy
- ◆ Birth Control Pills/Hormone Replacement Therapy
- ◆ Combinations thereof

# Stroke and Women

## ◆ Age

- Risk of stroke doubles each decade over the age of 55
  - ◆ Men > Women
  - ◆ African American/Hispanic > Caucasian
  - ◆ Smoking – 50% increased risk of stroke regardless of age
  - ◆ The more one smokes the greater the risk.

# Migraine and Stroke

- ◆ Migraine with Visceral Aura (PMVA)
  - Stroke risk is the highest within the first year after diagnosis.
  - Women  $\leq 50$  years of age, with PMVA, are at greatest risk of stroke.
  - Women without hypertension, diabetes mellitus or myocardial infarction are at greatest risk for a PMVA-related stroke.

# Pregnancy and Stroke

- ◆ Pregnancy increases the risk of stroke by 2.5 times.
- ◆ Ischemic stroke risk is greatest in the first 6 weeks postpartum.
  - Greater than 9 times that of a non-pregnant woman.
- ◆ Hemorrhagic stroke risks are greater during pregnancy
  - AVM's (arteriovenous malformations) tend to bleed during the 2<sup>nd</sup> trimester.

# Pregnancy and Stroke

- Aneurysms tend to bleed during the 3<sup>rd</sup> trimester.
- The postpartum period (6 wks after delivery) has an increased risk of stroke 28 times that of normal women.
- The overall risk of stroke during pregnancy and the postpartum period is 8%.

# Birth Control Pills/Hormone Replacement Therapy and Stroke

- ◆ The use of birth control pills increases the risk of stroke by 3 times.
- ◆ Hormone replacement therapy increases the risk of stroke by 29%.
- ◆ Stroke that occur as a result of hormone replacement therapy are more severe.
- ◆ Women on hormone replacement therapy, who have a stroke, have an overall poorer outcome.

# Stroke Risks with Combinations

◆ Migraine	Odds Ratio
– Without aura	3
– With aura	6
– Family Hx of Migraine	17
◆ BCP	7
◆ Smoking	8
◆ PMVA and BCP	12

# Stroke Risks with Combinations

- ◆ Migraine + BCP/HRT + Smoking
  - Ages 20-24 with PMVA/BCP
    - ◆ RR = 16
  - Ages 30-34 with PMVA/BCP
    - ◆ RR 29
- ◆ BCP
  - With hypertension = 7 fold increased risk
  - With smoking = 11 fold increased risk
  - With hypertension and smoking = 20 fold increased risk

# Stroke Outcomes in Women

- ◆ Women, in general, have poorer outcomes with stroke.
- ◆ Women report lower QOL (quality of life) scores 6 months post stroke.
  - Includes physical, mental, vitality and independence
- ◆ Differences in QOL outcomes are not related to age, stroke subtype or co-morbidities.
- ◆ Overall, women have increased mortality from stroke.