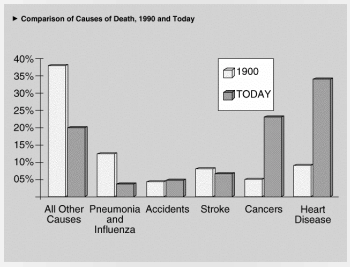
NURS 821
Vascular and Cardiac Disorders

Cardiovascular Risk Factors
Lecture 6, Part I

Comparison of Causes of Death, 1990 and 2001



Cardiovascular Disease Statistics (AHA, 2000)

- Single largest killer of men and women in U.S.
- Single leading cause of death in women
- More than 466,000 deaths/year
- >43% hospital discharges over age 65

Unalterable Risk Factors

- Age
- Gender
- Race
- Genetics

Alterable Risk Factors

- Smoking
- Cholesterol
- Inactivity
- TABP
- Chronic stress
- Drug abuse
- Hypertension
- Diabetes

Cholesterol Recommendations

- Increase H(ealthy)dls
- Decrease L(ethal)dls
- Cholesterol-lowering therapy retards CAD progression and decreases thrombolic events
- Recommend aggressive cholesterol management

J-Curve Phenomenon

- Describes graph of large groups of BP and TC levels
- High BP and high TC at top of curve are more likely to die of CVD
- Also, those at very bottom with lowest BP and TC have increased CVD mortality
- Need different treatments (AHA, 2000)

CV Risk and Diet

- High antioxidant intake associated with decreased CV risk
  - May inhibit multiple proatherogenic and thrombotic oxidative events in arterial wall.
- Effects mainly with foods, not supplements
- Evidence from secondary prevention trials on Vitamin E-beneficial
- (Tribble, 1999)

Antioxidants

- Controversial benefit
- Potential benefits
  - May detoxify cholesterol-prevents oxidation of LDL to toxic form fostering plaque build up
  - May fight chronic inflammation
  - May improve vascular function
  - Diminish blood clots (Vits.E, C)
  - Recommendation E-100-400 IU, C-200-500 mg (Blumberg, 2002)

Dietary Recommendations

- DASH diet-very low in salt
- Beta-carotene supplements not beneficial, maybe deleterious
- Recommendation-diet high in antioxidant-rich fruits, vegetables, and whole grains
- Fish oils- clinical trials

Homocysteine and CVD Risk

- Homocysteine- amino acid in blood
- Independent graded risk factor
- May damage intima of arteries, promoting thrombosis
- Lesions
  - fibrous
  - excess extracellular matrix
  - frayed lamina
  - thin and necrotic media (AHA, 2000; Malinow et al., 1999)

Homocysteine

- Genetic influence
- Genetic form-life threatening disease at young age
- 12-47% CVD patients have elevations influenced by diet

  Recommend diet, not supplements-grains and green leafy vegetables

- vitamins may help break homocysteine down
  - Folic acid
  - B6
  - B12

Diabetes and CVD

- 10.3 million Americans diagnosed; 5.4 million undiagnosed
- independent risk factor for CVD
- 65% of DM die of CVD
- worse CV prognosis
- estrogen protection lost (Grundy et al., 1999)

Diabetes Impact on CVD

- Atherosclerotic CHD
- Diabetic Cardiomyopathy
- Stroke
- Renal disease-diabetic nephropathy
- Covariate risk factors-predisposing factors, insulin resistance (Grundy et al., 1999)