Health and stress (week 2)

The impact of stress on Cardiovascular Disease

Dr. Beriwan A. Ali

PhD. Manchester University, England, UK.
MSc. Salahaddin University, Erbil, Iraq.
BSc. Salahaddin University, Erbil, Iraq.

Lecturer
Medical Microbiologist
Erbil Medical technical Institute
Erbil Polytechnic University

Lecturer
TISHK Int. University

GBD Collaborator
Institute of Health Metrics and Evaluation
University of Washington
Seattle, Washington, USA.

Outlines

- Source of stress

- Response to stress

- Stress and heart disease

- Stress predictors

- Research data

Objectives

- Count the sources of stress
- Count and compare the general responses of stress.
- Analyze the available research data

Source of stress

- Stress is a normal part of life.

- physical causes like not getting enough sleep or having an illness.

- Emotional, worrying about not having enough money or the death of a loved one.

- less dramatic causes like everyday obligations and pressures that make you feel that you are not in control.

Common responses to stress include:

- Aches and pains

- Decreased energy and sleep

- Feelings of anxiety, anger, and depression

- Impatience

- Forgetfulness

- People respond to stressful situations differently.

- Some react strongly to a situation.

- Others are relaxed and unconcerned. Luckily, you can decrease the effect of stress on your body.

- Identify situations that cause stress. Although difficult, try to control your mental and physical reactions to these stressful situations.

Stress Can Increase Your Risk for Heart Disease

- the high levels of some stress hormones e.g. **cortisol** from long-term stress can increase blood cholesterol, triglycerides, blood sugar, and blood pressure (common risk factors for heart disease).

- stress can cause changes that promote the buildup of plaque deposits in the arteries.

- Even minor stress can trigger heart problems like poor blood flow to the heart muscle (a condition in which the heart doesn't get enough blood or oxygen).

- long-term stress can affect how the blood clots (makes the blood stickier and increases the risk of stroke).

The major manifestations most often studied

- Include angina pectoris, myocardial infarction, and sudden death.
- It is necessary to **maintain a separation among these** since the risk factor may be clearly different.
- Thus, indices of neuroticism, anxiety, and distress relate prospectively to **angina**, while they appear to be only the consequence of MI.
- E.g: distinguishing between **sudden death** (the first manifestation of coronary heart disease) and **coronary heart disease mortality** in general, which reflects death certificate diagnosis irrespective of presence of previous morbidity.
- The latter may be sensitive to many variables that influence case fatality, including **socioeconomic status**, **medical care**, **depression**, and so on.

Stress predictors (research data)

- Prospective studies "include multivariate adjustments for established risk factors" particularly age, blood pressure, serum cholesterol, smoking status have yielded the most convincing "**stress" predictors**.

- It was noted that for MI, a certain cluster of symptoms and complaints (poor sleep, exhaustion, inability to relax) appears as a confirmed risk factor.

- For example, **social mobility** seemed to point to promising classes of environmental exposures

- The concept is defined by a multitude of attributes: hard-driving effort, striving for achievement, competitiveness, aggressiveness, haste, impatience, restlessness, alertness, hurried motor movements.

- It is conceptualized as the result of a **predisposition**, **stimulated by appropriate environmental challenges.**

- **European** male patients with heart disease report excess stresses in the work setting, while **American** male patients report excess stresses in the family setting.
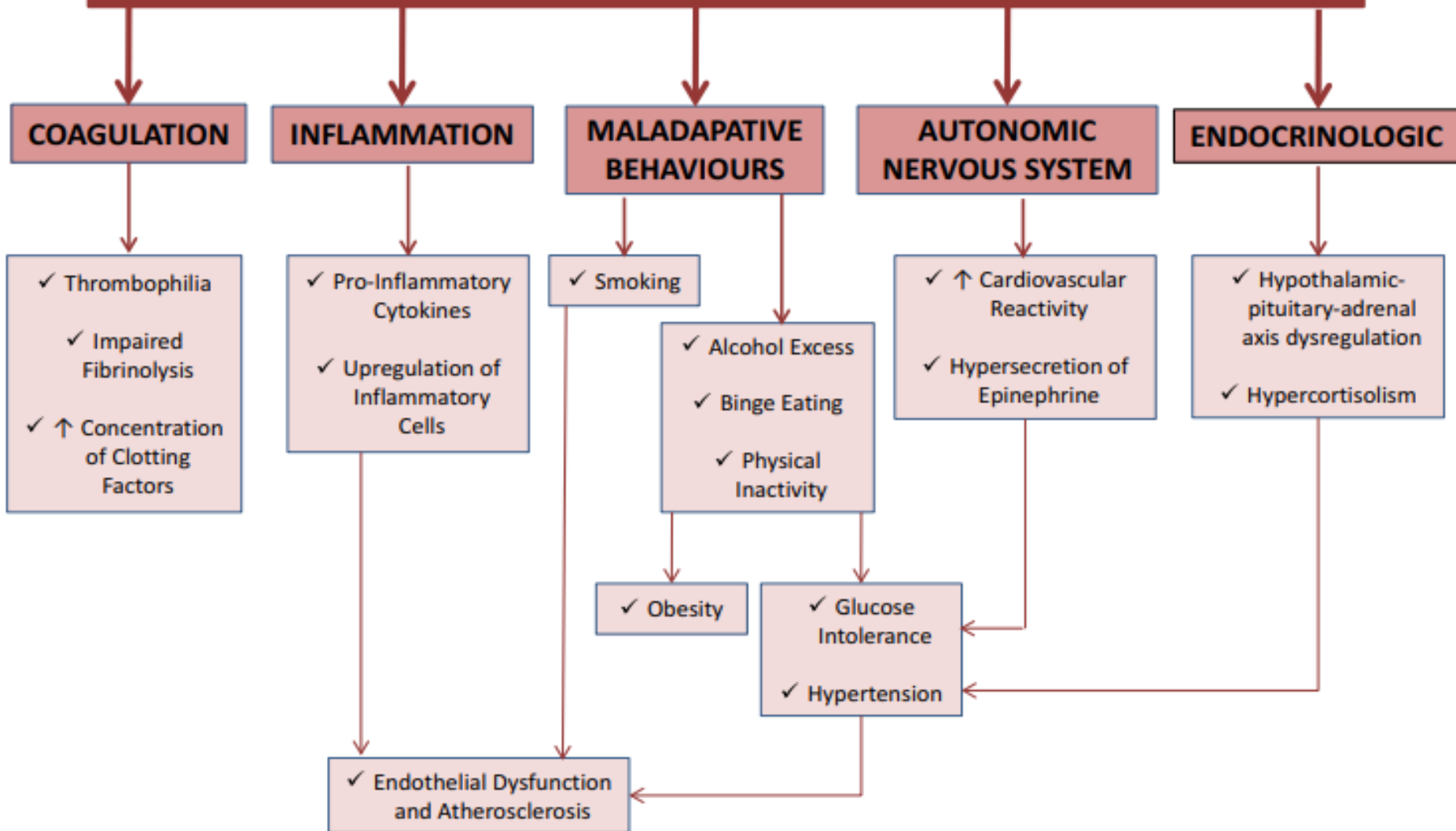
Figure 3. Potential mechanisms by which work-related stress may lead to coronary heart disease.

References

- Margolis *et al.*, 1983, Type A Behavior: An Ecological Approach, Journal of Behavioral Medicine, Vol. 6, No. 3.

- Sara *et al.*,2018,Association Between Work-Related Stress and Coronary Heart Disease: A Review of Prospective Studies Through the Job Strain, Effort-Reward Balance, and Organizational Justice Models, **Journal of the American Heart Association** Volume 7, Issue 9.