Hypertension and Hyperlipidemia

University of Illinois at Chicago
College of Nursing
Learning Objectives

1. Provide a basic level of knowledge regarding hypertension and hyperlipidemia and care coordinators/ team members such as how to take and understand parameters of blood pressure and high cholesterol
2. Identify red flag symptoms of hypertension and high cholesterol
3. Discuss assessing and managing actions related to hypertension and high cholesterol such as medication management and provider follow up
What is Blood Pressure?

• As your heart pumps, it forces blood throughout your body
• The action of the heart causes difference between systolic (pumping) and diastolic (resting) blood pressure
• Force is needed to ensure blood gets where it is needed
• Too much force can cause damage
<table>
<thead>
<tr>
<th>BLOOD PRESSURE CATEGORY</th>
<th>SYSTOLIC mm Hg (upper number)</th>
<th>DIASTOLIC mm Hg (lower number)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORMAL</td>
<td>LESS THAN 120</td>
<td>and</td>
</tr>
<tr>
<td></td>
<td>LESS THAN 80</td>
<td></td>
</tr>
<tr>
<td>ELEVATED</td>
<td>120-129</td>
<td>and</td>
</tr>
<tr>
<td></td>
<td>LESS THAN 80</td>
<td></td>
</tr>
<tr>
<td>HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 1</td>
<td>130-139</td>
<td>or</td>
</tr>
<tr>
<td></td>
<td>80-89</td>
<td></td>
</tr>
<tr>
<td>HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 2</td>
<td>140 OR HIGHER</td>
<td>or</td>
</tr>
<tr>
<td></td>
<td>90 OR HIGHER</td>
<td></td>
</tr>
<tr>
<td>HYPERTENSIVE CRISIS (consult your doctor immediately)</td>
<td>HIGHER THAN 180</td>
<td>and/or</td>
</tr>
<tr>
<td></td>
<td>HIGHER THAN 120</td>
<td></td>
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</tbody>
</table>
Incidence/Prevalence

- 1/3 Americans over age 20 have high blood pressure
- 20% are not aware they have high blood pressure—Many people do not experience symptoms
- Only about 50% of US adults with high blood pressure have it under control
- If untreated, high blood pressure can lead to damage in the circulatory system
- High blood pressure increases your risk for heart disease and stroke

(American Heart Association, 2016; CDC, 2016; CDC, 2015)
Blood Pressure and Related Disorders

• About 70% of individuals having their first heart attack have high blood pressure

• Approximately 80% of individuals having their first stroke have high blood pressure
Causes, Risks

- Many transitioning members have been diagnosed with hypertension
- Factors related to transition may make it more difficult to manage blood pressure such as
  - Learning to self-monitor blood pressure and weight
  - Shopping and preparing his or her own meals
  - Medication management skills
  - Co-morbid conditions
- Many mortalities in Williams and Colbert are linked to cardiovascular causes
Consequences

- Hypertension makes the heart work harder to get blood and oxygen where it needs to go
- Can cause hardening of the arteries (atherosclerosis)
- Can lead to heart disease and stroke (first and third leading causes of death in US)
Signs and Symptoms

- Headache
- Dizziness
- Blurry vision
- Chest pain
- Most of the time presents with no symptoms
Red Flags

- "Silent Killer"
  - Confusion / Fatigue
- Chest Pain
- Strong Headache
- Muscle Weakness
  - Changed Coordination
- Dizziness / Lightheaded
- Fainting
- Arm/Jaw Pain
- Cold / Clammy Skin
- Nausea / Vomiting
- Blurred Vision
Assessment

• PROVIDERS:
  • Is Member seeing providers as recommended?
  • Are providers receiving information regarding member’s current condition?
• DME: Did the member transition with all necessary DME?
• MEDICATION:
  • Is Member medication compliant?
  • Is member having any red flag symptoms?
  • Is member experiencing any side effects to medication (dizziness, confusion, falls)?
• DIET: What is member’s nutritional status?
• EXERCISE: Does member have regular access to physical activity?
• MONITORING: Is member regularly monitoring their blood pressure?
  o Are blood pressure readings within safe limits?
  o Are blood pressure readings being reported to health care providers?
Assessment: Member Self Management of BP

• How compliant is member with medication, diet and exercise?
• What changes will occur at transition that might impact member’s BP (access to activities, cooking independently, medication self administration)?
• MONITOR BP: Does the member have recent DME including blood pressure cuff and scale?
  • Is the member able to self-monitor AND report blood pressures (assess over time, not just single session)?
  • What have recent blood pressures been?
• MEDICATIONS: What medications are prescribed and when were they last changed?
Treatment

- Collaborate with providers
- Medication plan
- Hypertension supplies
- Self-management skills
- Nutrition
- Lifestyle habits and choices
Management: Medications

- There are a lot of medications available for hypertension management
- Common medications- Lisinopril, Atenolol, Metoprolol, HCTZ, Losartan, Amlodipine
- Common side effects- increased urination, dizziness, weakness, cough, headache
- Common side effects with antipsychotics- abnormal heart rhythm, lower blood pressure
Monitoring Supplies

- Blood Pressure Cuff
- Blood Pressure Log
- Action Guide

**Blood Pressure Tracker**

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Blood pressure</th>
<th>Time</th>
<th>Blood pressure</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample</td>
<td>11:45</td>
<td>127/87</td>
<td>8:24</td>
<td>154/98</td>
<td>Stressed day at work</td>
</tr>
</tbody>
</table>
Checking Blood Pressure

Choosing the correct blood pressure cuff size
Measure the circumference of your upper arm with a cloth measuring tape midway between the elbow and shoulder. Choose a cuff size that includes this measurement.

Position for taking your blood pressure at home

1. Rest for 5 minutes before measuring your blood pressure.
2. Sit in a chair with both feet flat on the ground and back straight.
3. Place your arm at the level of your heart or chest.
4. Stay still and do not talk as your blood pressure machine operates.

Measure your blood pressure in the morning right after you wake up or in the evening before you go to bed. Try to measure your blood pressure at the same time every day.
Monitoring Blood Pressure

Be still
• No smoking, drinking caffeine, or exercise 30 minutes before measuring
• Avoid conversation when your blood pressure is being taken

Sit correctly
• Back straight and supported (on a dining chair, not sofa), feet flat on the floor and legs uncrossed
• Arm supported on flat surface (such as a table) with the upper arm at heart level
• Know correct placement for the cuff you are using

Measure at the same time every day

Take multiple readings and record the results
• Take two or three readings one minute apart
• Record the results using a paper, online tracker or monitor’s built-in memory

(American Heart Association, 2016)
Collaboration

- Many individuals with hypertension have multiple health conditions
- Individuals commonly have multiple providers and need to be seen regularly to monitor
  - Primary Care Provider (every 3 months)
  - Cardiologist (once a year)
  - Co-morbidity specialists (varies)
- Collaboration
  - Prevents duplicating treatment
  - Facilitates a comprehensive care plan
  - Identifies complications
  - Identifies resources
- Impact of co-morbid conditions
Self Management

Knowledge

Resources

Abilities

Barriers
Prevention

• Sleep
• Exercise: Exercise
  ✓ 150 minutes of moderate exercise per week
  ✓ Can include household chores, walking, swimming, climbing stairs, or exercise classes
• Talk to the care team about recommended diet
• Healthy food choices plays a large role in management
• Nutrition
  ✓ DASH diet – increase servings of fruits and vegetables, decrease fats, lean meats and proteins, decrease sodium, 2000 calorie max
  ✓ Tracking daily fluid intake
  ✓ Avoiding alcohol and caffeine
  ✓ Eating a heart healthy diet
Client Member Education

- Ensure appointments with healthcare providers are kept
- Keep a list of all medications (prescription and over the counter)
- Expect to take medications for life
- Never cut back or decrease dosages without consulting with a healthcare provider
Hyperlipidemia
What is Hyperlipidemia?

What is hyperlipidemia?

- Blood has too many lipids (fats)
- Hypercholesterolemia- too much bad cholesterol (LDLs) in blood
Incidence/ Prevalence

- 73.5 million adults (31.7%) in the U.S. have high low-density lipoprotein (LDL), or “bad,” cholesterol
- Fewer than 1 out of every 3 adults (29.5%) with high LDL has the condition under control
- Less than half (48.1%) of adults with high LDL are getting treatment to lower their levels
- People with high total cholesterol have approximately twice the risk for heart disease as people with ideal levels
- Nearly 31 million adult Americans have a total cholesterol level greater than 240 mg/dL
Causes and Risks for Hyperlipidemia

- Diet
- Physical activity
- Smoking
- Excessive alcohol
- Pregnancy
- Liver Disease and Failure
- Lupus
- HIV/AIDS
- Genetics
- Specific diseases and medications (renal disease, hypothyroidism)(diuretics)
Hyperlipidemia and other conditions

- Diabetes Mellitus increases the risk for high cholesterol
- Body needs glucose (sugar) for energy. Insulin is a hormone made in the pancreas that helps move glucose from the food eaten to body’s cells
- Diabetics do not make enough insulin or can’t use its own insulin as well as it should, or both
- Diabetes causes sugars to build up in the blood
Management of Hyperlipidemia

• Many of the transitioning members have been diagnosed with hyperlipidemia
• Factors related to transition may make it more difficult to manage hyperlipidemia
  ✓ Follow up with labs and appointments
  ✓ Shopping and preparing his or her own meals
  ✓ Medication management skills
  ✓ Co-morbid conditions
• Many mortalities in Williams and Colbert are linked to cardiovascular causes
How are Lipids Measured?

Two types of lipids are in the blood

- **Cholesterol**- produced naturally in the liver because every cell in the body uses it and travels in the bloodstream through vessels and two types High density lipoprotein (HDL) and Low density lipoprotein (LDL)
- **Triglycerides**- fats directly from your diet that come from extra calories

Blood work: Lipid panel- includes Cholesterol (LDL, HDL)

- LDL- “bad cholesterol” – less than 130 mg
- HDL- “good cholesterol”- higher than 60 mg
- Total Cholesterol- less than 200 mg
- Triglycerides- less than 150 mg
Complications of Hyperlipidemia

- Heart Attack
- Stroke
- Heart disease
- Vascular Disease
Management of Hyperlipidemia

Goal is to decrease LDL level if no event

• Medication management

• Lifestyle management: Diet, Exercise, Reducing stress
  o Diet low in saturated and trans fats
  o Choose fruits, vegetables, foods with high omega 3 such as avocado, fish, nuts, lean meats, whole grains, low sugar, non tropical vegetable oils (canola, corn, olive, safflower)
  o Limit sugary sweets, red meat, full fat daily, salty foods, fried foods
Management of Hyperlipidemia

- **EXERCISE:** Cardiac activity 30 minutes 5 times weekly
- **SMOKING:** Eliminate tobacco
- **ALCOHOL:** Reduce alcohol intake
- **MEDICATION Management**
  - Initial Drug Therapy are **Statins** i.e. Atorvastatin, Pravastatin, Simvastatin, Lovastatin (Lipitor, Crestor, Zocor) Zetia, Vytorin, Niacin
  - **Side effects of medications**
    - Liver Injury- increased enzymes
    - Muscle Injury- muscle pain
    - Diabetes
- **BLOOD TESTS:** Labs to determine if member will be started on medications
  - **Monitor labs every 3 months while on medication**
Hyperlipidemia Follow-up

- Ensure appointments with healthcare providers are kept
- Keep a list of all medications (prescription and over the counter)
  - Never cut back or decrease dosages without consulting with a healthcare provider
- Monitor shopping and food choices
- Collaborate with providers
- Red flags monitoring
- Assessment- ongoing
Management of Hyperlipidemia

Individuals commonly have multiple providers and need to be seen regularly to monitor

- Primary Care Provider (every 3 months)*
- Cardiologist (once a year)*
- Co-morbidity specialists (varies)

Collaboration

- Prevents duplicating treatment
- Facilitates a comprehensive care plan
- Identifies complications
- Identifies resources

Impact of co-morbid conditions
Management of Hyperlipidemia

• Nutrition
  o Talk to the care team about recommended diet
  o Healthy food choices plays a large role in management
  o Low Cholesterol— increase servings of fruits and vegetables, decrease fats, increase lean meats and proteins, decrease sodium, 2000 calorie max, decrease sweets, full fat dairy
  o Monitor sodium intake

• Exercise
  o At least 30 minutes of cardio activity 5 times weekly
  o This can include walking, swimming, household chores
Red Flags

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- Nausea / Vomiting
- Sweating
Resources

- American Heart Association
  - www.heart.org
- Silver Sneakers
  - https://www.silversneakers.com
- Centers for Disease Control and Prevention
  http://www.cdc.gov/bloodpressure/index.htm
References

• American Heart Association (2016). The facts about high blood pressure. Retrieved from http://www.heart.org/HEARTORG/Conditions/HighBloodPressure/AboutHighBloodPressure/The-Facts-About-High-Blood-Pressure_UCM_002050_Article.jsp#.WC3-nXrGqhM


• American Heart Association 2016. Monitoring your blood pressure at home. Retrieved from http://www.heart.org/HEARTORG/Conditions/HighBloodPressure/SymptomsDiagnosisMonitoringofHighBloodPressure/Home-Blood-Pressure-Monitoring_UCM_301874_Article.jsp#.WD8GD7IrKoo


Thank you all for being here and for your commitment to improving the health and well-being of your client members.