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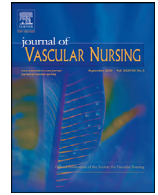
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Clinical Column

Healthcare Inequity in PAD

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COVID-19 exposed health inequity since it affected many individuals in ethnic and racial minority groups. Healthcare inequity is defined as differences in the distribution of health resources and health status due to social conditions such as education, ethnicity, gender, income/employment, community.²⁵ The Centers for Disease Control and Prevention (CDC) identifies health disparities as, “preventable differences in the burden of disease, injury, violence, or opportunities to achieve optimal health that are experienced by socially disadvantaged populations.” A health care disparity typically refers to differences between groups in health insurance coverage, access to and use of care, and quality of care. Healthcare inequity is present in peripheral arterial disease (PAD). Black Americans are less likely to be diagnosed and treated despite being disproportionately affected by PAD (the rates of PAD are twice as high as other ethnicities)²² and they have a higher rate of lower extremity amputation.⁷ Black Americans typically present with more severe disease and have generally more atypical symptoms, and often suffer worse outcomes.⁶

There are multiple examples of healthcare inequities in the literature, often affecting women, minorities and those with low socioeconomic status.

- Cardiac medications were underutilized among women, middle-aged adults, and racial/ethnic minorities with coronary artery disease.²³
- The odds of receiving both counseling and medication for smoking cessation were lower among uninsured patients.⁴
- Cardiovascular risk factor control is lower in Black Americans.¹⁵
- Women and Black Americans have historically been underrepresented in cardiovascular trials, therefore research is not always generalizable to these groups.¹⁷
- Among Medicare beneficiaries with diabetes and PAD, there is a 4-fold difference in amputation risk between Black Americans and other racial/ethnic groups; they are at greater risk of lower extremity amputation.⁷

How can nurses reduce healthcare inequities in PAD?

Healthcare professionals exhibit the same levels of implicit bias as the wider population leading to a negative evaluation of a person on the basis of irrelevant characteristics such as race or gen-

der.¹⁰ The Code of Ethics for Nurses requires that all nurses actively work to reduce disparities.² Nurses must be aware of the existence of implicit bias.

Nurses can reduce healthcare inequity by recognizing those individuals at risk for PAD, knowing the appropriate diagnostic tests for PAD and utilizing guideline directed medical therapy in treating PAD patients.

The 2016 PAD Guidelines¹¹ tell us that patients at increased risk for PAD are: > 65 years, Age 50–64 years with risk factors for atherosclerosis (eg diabetes mellitus, dyslipidemia, history of smoking, hypertension) or a family history of PAD, Age < 50 years with diabetes mellitus and one additional risk factor for atherosclerosis, and individual with known atherosclerotic disease in another vascular bed (eg, coronary, carotid, subclavian, renal or mesenteric artery stenosis) or an abdominal aortic aneurysm.

Know the risk factors for the development of PAD. Cigarette smoking is one of the most important risk factors in the development of PAD and is linked to poor cardiovascular outcomes and higher amputation rates. Patients with PAD who smoke cigarettes or use other forms of tobacco should be advised at every visit to quit and should be assisted in developing a plan for quitting to include pharmacotherapy and/or referral to a smoking cessation program. Additionally, patients with PAD should avoid exposure to second-hand smoke at work, at home, and in public places.¹¹ Interestingly, one study compared Black and White low income smokers following a smoking cessation program suggested that racial differences in smoking abstinence could be due to lack of home ownership, lower income, and more community stressors.²¹

Dyslipidemia is another risk factor for the development of PAD and the goal for treatment should be an LDL of < 70.¹⁴ All patients with PAD should be treated with statins, unless intolerant. Several studies have shown that statins reduce the rate of amputation with relative risk reductions between 18% and 35% over those who used non-statin lipid-lowering therapies.¹⁶ However Black and Hispanic Americans were found to have higher rates of cholesterol elevation and lower rates of statin use in the REACH (Reduction of Atherothrombosis for Continued Health) registry.¹⁸

Another important risk factor for atherosclerosis and PAD development is diabetes mellitus. The goal for treating diabetes mellitus should be to attain a hemoglobin A1C of < 7.0.¹ Management of diabetes mellitus in the patient with PAD should be coordinated between members of the healthcare team and glycemic control can be beneficial for patients with critical limb ischemia to

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reduce limb-related outcomes.¹¹ However, according to Golden,¹² Black Americans are more likely to have diabetes mellitus, are less likely to be aware of their diagnosis and, are less likely to achieve glycemic control.

Hypertension (HTN) is an important risk factor for the development of PAD and optimal goal management of hypertension should be < 130/80.²⁴ Antihypertensive therapy should be prescribed to patients with hypertension and PAD to reduce the risk of myocardial infarction (MI), stroke, heart failure, and cardiovascular death.¹¹ However the prevalence of HTN are highest in Black Americans, while treatment of HTN is lowest among Black Americans.⁹

Nurses should understand the diagnostic tests for PAD. In patients with suspected PAD, an Ankle-Brachial Index (ABI) should be performed. An ABI is a simple, noninvasive test that is obtained by measuring systolic blood pressures at the arms (brachial arteries) and ankles (dorsalis pedis and posterior tibial arteries) in the supine position by using a hand held Doppler. An abnormal ABI is ≤ 0.90 , a borderline ABI is 0.91–0.99, a normal ABI is 1.00–1.40, while a non-compressible tibial vessel (often seen in diabetes and end stage renal disease) can produce an ABI > 1.40.¹¹

Presenting Symptoms of PAD can be:

- Exertional muscle pain in legs when walking, climbing stairs or exercising that subsides with rest (intermittent claudication) occurs when the leg muscles have insufficient blood supply during exercise.¹¹ Neurogenic claudication may cloud the diagnosis of PAD and includes leg pain that is exacerbated by walking, standing, or upright exercises, while the leg pain is relieved by sitting or forward flexion at the waist.¹⁹
- Pain in the feet at rest that resolves when feet are placed in a dependent position occurs when the nerves in the feet have insufficient arterial supply when supine, but with the help of gravity when the legs are dependent, the nerve pain improves (rest pain).⁵
- Foot or toe wounds that won't heal or are slow to heal, or the presence of gangrene (critical limb ischemia).⁵
- A decrease in the temperature of the lower leg or foot.⁵
- Poor nail growth on the toes or hair growth on the legs.⁵

Physical exam in evaluating patient for PAD

Patients at increased risk of PAD should undergo vascular examination, including palpation of lower extremity pulses to include femoral, popliteal, dorsalis pedis, and posterior tibial, auscultation for femoral bruits, and inspection of the legs and feet for ulcers/color/temperature.¹¹

It is helpful for nurses to know how to distinguish the differences between arterial and venous ulcers. Arterial wounds are usually on the foot, have a punched out appearance, have pale granulation, are dry, and the ulcers are more painful when the foot is elevated. Venous ulcers are generally in the gaiter (tibial) region, are shallow with jagged edges, are painful if infected, are associated with edema and have ruddy granulation.¹³

Management of PAD

All patients with PAD should be offered medications that can reduce their cardiovascular risk. In addition to treating the atherosclerotic risk factors as above, antiplatelet therapy is reasonable to reduce the risk of MI, stroke, or vascular death in asymptomatic patients with PAD (ABI ≤ 0.90).¹¹ Patients with lower extremity PAD are at increased risk of major adverse cardiovascular events (MACE) and major adverse limb events (MALE) which is associated with a poor prognosis. The (Cardiovascular Outcomes for People Using Anticoagulation Strategies [COMPASS] trial showed

that using the combination of rivaroxaban 2.5 mg twice daily and aspirin 81mg/day significantly lowered the incidence of MALE and the related complications.³

Supervised Exercise Therapy (SET) consists of weekly exercise sessions occurring 3 days per week lasting up to one hour for a maximum of 12 weeks. It consists of intermittent bouts of walking interspersed with periods of rest when moderate to severe leg claudication occurs. Pushing through the claudication symptoms eventually helps create collateral blood vessels and can eventually lead to a longer distance to claudication. Supervised exercise is recommended to improve functional status and quality of life as well as to reduce leg symptoms.²⁰ Structured community-based or home-based exercise programs are an alternative to supervised exercise for patients with claudication.¹¹

For those limited by intermittent claudication or at risk for limb loss with critical limb ischemia, revascularization to improve arterial perfusion can be accomplished by endovascular, surgical peripheral interventions or a hybrid treatment (a combination of both interventions).

In addition to knowledge about the presentation and management of PAD, nurses can reduce healthcare inequities by improving health literacy.⁸ According to the world health organization (WHO), health literacy is defined as “the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health“. Nurses can optimize health literacy in PAD patients by providing them information about PAD and clear instructions regarding medications and risk factor management.

It is essential that all nurses recognize healthcare inequities. Factors that affect health equity include: healthcare access and use (lack of insurance, transportation, ability to leave work for appointments), discrimination (effects not only healthcare, housing, education and finance, but can lead to chronic/toxic stress), housing (minority groups often live in crowded conditions compared to non-Hispanic white individuals and they may live in area of greater pollution), education/income/gaps in wealth (individuals from some racial/ethnic minorities have less access to high quality education, face greater challenges in getting jobs, and if working, they may not be able to afford to miss work even if they're sick), occupation (minority groups often work in essential settings).

Healthcare inequalities exist in PAD patients particularly as they relate to minorities, and those with low socioeconomic status. PAD disproportionately affects minority groups. Risk factors for the development of PAD are similar, but presenting symptoms can differ between individuals, especially in minority patients. All nurses should work toward healthcare equality by knowing the signs and symptoms of PAD, the notable clinical findings of PAD, the clinical practice guidelines for treating PAD patients and educate patients regarding their PAD management.

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