

INTERVIEW

Why Are We Failing to Prevent Amputations?

An Interview With Mary Yost, MBA

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At the 2023 Amputation Prevention Symposium (AMP), Mary Yost, MBA, president of the Sage Group, the leading research and consulting company specializing in peripheral vascular disease, presented her thoughts on the reasons why clinicians are failing to prevent amputations. *Vascular Disease Management* spoke with Ms. Yost to discuss her presentation.

Mary, tell us about the presentation you gave at AMP, regarding why we are failing to prevent amputations.

There are numerous reasons why we are failing to prevent amputations. One of the key points of my presentation is that the reasons that we fail to prevent amputations are modifiable and preventable—that's a very important point.

One of the first variables is that we're not diagnosing and treating the disease in time; there's a delay in diagnosis and treatment. As we saw in the EUCLID trial, patients who have critical limb ischemia (CLI) are much more likely to undergo an amputation than those without CLI. That holds true for both major and minor amputations. In addition, it's been shown that patients who have an ankle-brachial index (ABI) less than 0.80 have an increased risk of amputation by almost 1.4 times for every 0.10 decrease in that ABI.

Disease severity is a huge factor. We also know that amputations increase with Rutherford category. At 4-years Rutherford 4, patients have a 6% risk of amputation; by the time the patient gets to Rutherford 6, or gangrene, amputation rates at 4 years are 30%.

Another factor is delays in referrals. In a recent study, internists, nephrologists, and endocrinologists were surveyed, and researchers found that 74% of them used watchful waiting as a treatment for peripheral arterial disease (PAD). And 63% thought that chronic nonhealing wounds were not a reason to refer the patient to a specialist. In one study, only 33% of Medicare patients were referred to a vascular specialist prior to major or minor amputation. Referral to a vascular specialist will reduce the risk of amputation.

The second variable is that clinicians are not revascularizing or doing diagnostic testing. Let's start with revascularization—we know that major amputation is frequently the first and only therapy that's offered to that patient. Fifty-one to 71% of patients do not have a revascularization performed, which then increases the risk of major amputation. Revascularization is also underutilized prior to minor

amputation, and the timing is important. Revascularization after minor amputation (rather than before) increases risk of limb loss by 2.11 times. Data have shown that patients who are revascularized are less likely to undergo a minor amputation or go on to a major amputation.

Then we have lack of diagnostic testing. Despite the fact that an angiogram will reduce the odds of a major amputation by 90%, data show that 45% to 82% major amputations are done without an angiogram. And that's despite the fact that an angiogram will reduce the odds of a major amputation by 90%. Also, only 49% to 63% of patients undergo any diagnostic testing prior to a minor amputation. Only 28% to 34% will have an angiography before that minor amputation. So that's a huge problem.

What is one of the biggest risk factors for amputation?

One of the key risk factors for amputation is diabetes. Sixty percent or more of CLI patients have diabetes, compared with only 14% of the general population. Diabetes has a profound impact on the disease. There is a much higher risk of amputation if glucose is abnormal, and a higher risk of re-amputation. There is also a dose response—the more the glucose is abnormal, the higher the risk for major amputation. The same is true for minor amputation. If a patient's HbA1c is above 7%, there's a higher risk for minor amputation. But glucose is inadequately controlled in 63% to 92% of these patients. Not only does abnormal glucose increase the risk of major amputation, it increases the risk of complications with revascularization.

Are certain patient groups at higher risk for amputation?

Yes. We have patient groups that are at very high risk for amputation, and we're not focusing on those groups and we're not treating them adequately. The first high-risk group is women, and half or more of the CLI population is female according to my estimates. Women tend to present more frequently with CLI than men do. That reflects the higher prevalence of asymptomatic atypical disease, less intervention at earlier stages, etc. And unfortunately, female gender is a risk factor for above-the-knee amputation.

African Americans are another high-risk group; in my estimate, they account for 30% of the CLI population. African Americans have a higher incidence of CLI and much higher risk of major amputation: 1 to 4 times the risk. African American women have the highest risk for major amputation, which is 7.6 times higher than that of other women; it's also higher than African American men.

Hispanics and Native Americans are two other very high-risk groups, and there's almost nothing even written about them, let alone focused on and treated. Both groups tend to present more frequently with CLI. They have a higher risk of amputation vs White patients. As I recall, Native Americans have the highest risk of CLI. And again, both groups tend to get amputations much more than White patients.

How does the lack of knowledge and awareness about PAD and CLI affect the amputation rate?

The public lack of knowledge and awareness of disease is a huge problem. In 2018 the American Heart Association did a survey and found that less than 50% of the participants knew anything about PAD, the leg symptoms, and the possibility of amputation. And what was even more depressing was the groups that had the least knowledge were Hispanics and African Americans. Only about 6% of them knew anything about the disease and knew the leg symptoms and the fact that amputation could be a result of this disease. So here we have some of the highest risk groups and they know nothing about the disease and are not aware that it exists.

If that's not bad enough, we have a lack of knowledge and awareness on the part of non-specialist doctors, medical students, and trainees. There isn't a lot of literature on this, but several surveys have shown that the awareness among non-specialist groups is very low. There was a survey of medical students that found they had very little knowledge of vascular surgery as a specialty, what vascular surgeons do, and what types of procedures they perform.

Do you think patients with CLI are being undertreated?

Yes. PAD is a risk factor equivalent to coronary artery disease, but PAD patients are undertreated vs coronary disease for their risk factors. PAD patients don't die of leg disease, they primarily die of heart attacks. The risk factors of patients with CLI are undertreated vs those with intermittent claudication, which is to me shocking.

We know that optimal medical management can reduce the risk of major amputation by 33%. One study looked at CLI patients and found that suboptimal medical management increased the risk of major amputation or death by eight-and-a-half times.

What is the one point you wanted the audience to take away from your presentation?

That amputations are modifiable and preventable. By addressing these factors, we can reduce the incidence of amputation. ■

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