Sex differences in guideline-directed medical therapy in 2021-22 among patients with peripheral artery disease (PAD)

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BACKGROUND

Peripheral artery disease (PAD) affects around 230 million worldwide (1.2). Guideline-directed medical therapies (GDMT) for PAD includes statin, antiplatelet therapy, angiotensin-converting enzyme inhibitor (ACEi)/angiotensin receptor blocker (ARB), glycemic control in patients with diabetes mellitus (DM), smoking cessation, healthy diet and exercise therapy in order to improve cardiovascular (CV) outcomes and patient functionality (Table 1). The 2021 AHA Scientific Statement on PAD highlighted underuse of GDMT despite a guideline update 5 years prior.

We examined sex differences in implementation of GDMT to understand whether subpopulations with PAD should be targeted to improve care.

RESULTS

Among 9,810 patients with PAD identified in the dataset, 50% (n=4,910) were women. Men had a higher prevalence of hypertension, hyperlipidemia, diabetes mellitus and coronary artery disease (CAD) (Table 2). Women were less likely than men to receive GDMT overall and in the subset with no history of CAD (Figure 1). Even among patients with concurrent DM or chronic kidney disease (CKD), defined as estimated glomerular filtration rate < 60 ml/min/1.73m², women were less likely to receive ACEi/ARB than men (all p<0.0001).

Table 2. Baseline characteristics of patients with PAD by sex.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Women (n=4,910)</th>
<th>Men (n=4,900)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, mean (SD)</td>
<td>63 ± 13</td>
<td>63 ± 13</td>
<td>P=NS</td>
</tr>
<tr>
<td>Smokers, n (%)</td>
<td>690 (14)</td>
<td>1010 (21)</td>
<td>P=0.0001</td>
</tr>
<tr>
<td>Arterial hypertension, n (%)</td>
<td>3142 (64)</td>
<td>3869 (81)</td>
<td>P=0.0001</td>
</tr>
<tr>
<td>Hypertension, n (%)</td>
<td>2504 (51)</td>
<td>3430 (70)</td>
<td>P=0.0001</td>
</tr>
<tr>
<td>Diabetes mellitus, n (%)</td>
<td>1290 (26)</td>
<td>1950 (40)</td>
<td>P=0.0001</td>
</tr>
<tr>
<td>Coronary artery disease, n (%)</td>
<td>737 (15)</td>
<td>1323 (27)</td>
<td>P=0.0001</td>
</tr>
<tr>
<td>Chronic kidney disease, n (%)</td>
<td>1100 (22)</td>
<td>1360 (28)</td>
<td>P=0.0001</td>
</tr>
</tbody>
</table>

DISCUSSION

Patients with PAD are at increased risk for major adverse cardiovascular and limb events. Those with polyvascular disease are at particularly high risk for clinical events (3). Despite updated guidelines and an AHA call to action in 2021, use of GDMT remained suboptimal even in 2021-22 in a large, diverse health system, particularly among women. Whether this is because women are not offered GDMT or do not use GDMT by choice, due to access constraints or for other reasons cannot be determined from this dataset. Targeted efforts to understand reasons for low utilization can be conducted in parallel with implementation science studies to identify practical and effective approaches to improving healthcare of patients with PAD.

Limitations: Our analysis was conducted on retrospective, albeit recent, pooled observational data which lacked patient level information. In addition, these findings reflect a single, large health system.

CONCLUSION

• GDMT prescription remains suboptimal among women with PAD, irrespective of concurrent CAD, DM or CKD.
• These observations highlight the opportunity to focus implementation efforts toward high risk subpopulations with low uptake of GDMT.

REFERENCES


DISCLOSURES

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