Clinical Trials in Peripheral Vascular Disease: Pipeline and Trial Designs—An Evaluation of the ClinicalTrials.gov Database

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Background
- Recent advances in therapies of peripheral vascular disease (arterial or venous) have provided greater options for treatment of the underlying disease.
- The IOM is a top priority topics for comparative effectiveness research lists peripheral artery disease as one of only two cardiovascular conditions in the top 5%
- Little is known about the current state of the entire peripheral vascular disease (PVD) trial portfolio and current trial designs
- The Clinicaltrials.gov (CTG) registry comprises over 250,000 trials in 157 countries
- The main utilization source for clinical trial information worldwide
- The Clinical Trials Transformation Initiative (CTTI) is a public-private partnership founded by the US Food and Drug Administration and Duke University, and includes more than 50 organizations across the clinical trial enterprise, the goal is to identify the quality and clinical and trial designs and generate evidence about how to improve the design and execution of clinical trials
- The CTTI developed a high-quality database of information contained in CTG
- Consequently, using the CTTI database of trials registered in the CTG, we sought to describe the current state of clinical trial designs for PVD

Methods
- Analysis was limited to those trials of extracardiac vascular disease commonly cared for by vascular specialists including cardiologists, vascular medicine specialists, vascular surgeons, interventional radiologists, and neurologists
- A dataset of 86,345 clinical trials in CTG were downloaded in XML format in October 2010, and compiled in a database for aggregate analysis
- Analysis was restricted to a 40,970 "interventional" study type from October 2007 through Sept 2010
- The CTTI database of trials registered in the CTG, we sought to describe the current state of clinical trial designs for PVD
- An initial subset of 3,175 studies with at least one CONDITION or CONDITION_BROWSE term potentially relevant to PVD were identified and manually reviewed

Results
- Studies enrolling patients with extracardiac vascular disease with the endpoints looking at plaque regression, plaque stabilization, decrease in inflammatory biomarkers, and measurements of abnormal arterial/medial thickness were categorized as prevention studies
- Studies of anti-atherosclerotic drugs were categorized under vascular disease
- Studies including cardiac conditions were identified by cardiologists
- Each study was categorized as arterial and/or venous
- Studies were allowed to be in more than one subgroup if they enrolled patients categorized within different subgroups
- Within the United States, we described regional access to PVD clinical trials graphically on a map at the zip code level

Conclusions
- Despite the IOM's priority to perform comparative effectiveness trials in arterial disease, a majority of the PVD trials did not fail to include an active comparator: therefore changes are needed to reduce barriers to perform trials with active comparators, or alternatively, other methods are necessary to compare therapies beyond randomized trials
- PVD trials investigate a greater percentage of drug and device therapies than cardiology trials
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