

WHOLE BODY MRA SCREENING

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Rapid screening with whole body magnetic resonance angiography (MRA) from the skull base down to feet with IV-contrast-enhanced (CE) protocols and phased array coil imaging is possible when employing a retrofit stepping table such as SKIP[®]: Stepping Kinematic Imaging Platform (Magnetic Moments, LLC, Bloomfield Hills, MI) (1). There are several epidemiologic studies that suggest that whole body screening may be the optimum strategy due to a high atherosclerotic risk factor burden in patients with atherosclerosis (AS). For instance, the prevalence of severe (>60% diameter) carotid artery stenosis (CAS) is as high as 34% in patients with coronary artery disease (CAD) undergoing CABG surgery (2). The prevalence of severe CAS is 19-21% in patients with PVD (3) and increases from 7% in patients with mild renal artery stenosis (RAS) to 28% with severe RAS (4). Screening appears justified since there are benefits to carotid endarterectomy in asymptomatic CAS \geq 60% (5). Screening for RAS in patients with PVD also appears justified given prevalence rates as high as 46% in patients with aortoiliac disease (6). Although asymptomatic PVD is not generally treated, its presence dictates an advanced systemic stage of AS which is prevalent in as high as 29% of patients \geq 70 years or \geq 50 years (with smoking or diabetes) (7). PVD also remains grossly underdiagnosed (7) in which fatal (34%) and non-fatal (6%) MI can occur over 24 months.

Accurate and cost-effective cardiovascular screening with whole body CE-MRA and cardiac MRI (rest cine, rest and adenosine stress myocardial perfusion and viability) can be performed in under 1-hour with SKIP[®]. This screening protocol may become justified since morbidity and mortality risks could, in theory, be reduced with surgical and/or interventional treatments as well as life style and pharmacologic interventions.

References:

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