

MARVY: Development of MRI based endovascular procedures for vascular surgery

The solution (Fig.2)

MARVY will be a gamechanger for vascular surgery practice by introducing MRI-based clinical decision making and endovascular therapy. The focus is on reducing radiation exposure for both patients and staff to a minimum and improving clinical outcomes. MRI has emerged as a radiation-free alternative to X-ray fluoroscopy with excellent soft-tissue contrast. The ability of MRI to provide images in multiple planes and to visualize flow is advantageous for image guidance. Taken together with the temperature mapping capabilities of MRI, MARVY stimulates its development as an interventional tool. MRI provides morphologic as well as gold-standard functional information such as blood flow, tissue oxygenation, diffusion, perfusion, and temperature changes. This broad variety of information is currently not available with any other imaging modality alone. This tremendous potential of MRI has provided the rationale for increased attention toward MR-guided interventions. The use of MR guidance for endovascular interventions does not require iodine containing contrast agents, which is an important advantage in patients with impaired renal function or diabetes. Currently almost all stentgrafts used in vascular surgery are MR compatible, which makes this change in practice feasible.

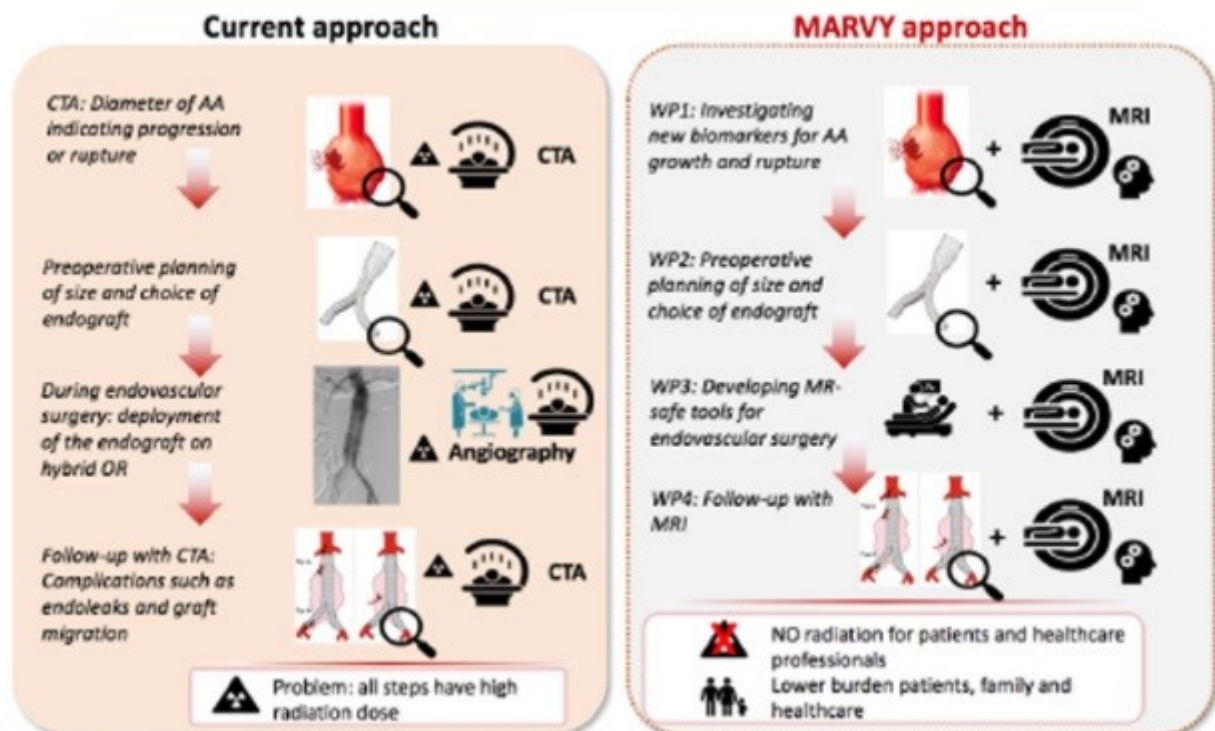


Figure 2. Current approach versus the MARVY approach.