Arterial Limb Disease Fact Sheet

CIRM funds projects seeking to better understand arterial limb disease and to translate those discoveries into new therapies.

Description

Peripheral limb ischemia, most often characterized as hardening of the arteries in the legs, may be present in as much as 20 percent of the population. But in a small fraction, around two million Americans, it has progressed to the point that it causes pain even when resting and threatens to result in amputation due to wounds that refuse to heal because of poor blood circulation. This condition is called Critical Limb Ischemia (CLI), and patients diagnosed with CLI are at risk for limb amputations (10 to 40%) and even death (50% within 5 years)[1].

Physicians can often treat CLI with various forms of minimally invasive surgery. They thread a catheter into the artery or vein and use a balloon or stent to push the blockage back against the vessel wall or a laser to vaporize the plaque. But many CLI patients have disease that is too extensive for these procedures to be fully effective, so for the past few years many researchers have searched for ways to coax the patients' bodies into growing new blood vessels through a process called angiogenesis. More recently researchers have started to investigate the possibility that stem cells could help with this new vessel growth.

CIRM Grants Targeting Vascular disease

Researcher name	Institution	Grant Title	Grant Type	Award Amount
John Cooke	Stanford University	EC regeneration in cerebrovascular ischemia: role of NO	SEED Grant	$476,995
Juan Carlos Izpisua Belmonte	Salk Institute for Biological Studies	Direct reprogramming towards vascular progenitors for the treatment of ischemia	Early Translational III	$2,340,000
John Laird	University of California, Davis	Phase I study of IM Injection of VEGF-Producing MSC for the Treatment of Critical Limb Ischemia	Disease Team Therapy Development - Research	$3,728,384
Kara McCloskey	University of California, Merced	Directed Differentiation of Specialized Endothelial Cells	Basic Biology V	$475,686
Laura Marcu	University of California, Davis	Multimodal platform combining optical and ultrasonic technologies for in vivo nondestructive evaluation of engineered vascular tissue constructs	Tools and Technologies III	$1,834,350
Deepak Srivastava	Gladstone Institutes, J. David	Use of Human iPSC-derived Endothelial Cells for Calcific Aortic Valve Disease Therapeutics	Quest - Discovery Stage Research Projects	$2,400,048
Michael Lewis	Cedars-Sinai Medical Center	Pulmonary Arterial Hypertension Treated with Cardiosphere-Derived Allogeneic Stem Cells	Clinical Trial Stage Projects	$7,354,772

Alyssa Panitch	University of California, Davis	Development of treatments to improve healing of ischemic wounds	Inception - Discovery Stage Research Projects	$235,099	
Ngan Huang	Palo Alto Veterans Institute for Research	iPSC-Derived Smooth Muscle Progenitors for Treatment of Abdominal Aortic Aneurysm	Inception - Discovery Stage Research Projects	$172,621	
Karen Christman	University of California, San Diego	Injectable pro-regenerative scaffold for treating symptomatic peripheral artery disease	Therapeutic Translational Research Projects	$2,839,317	
					Total: $21,857,272.00

Resources

- Vascular Cures: CLI
- UC Davis Vascular Center: CLI
- UCSF Vascular & Endovascular Surgery: CLI

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