

**Supplementary Table 3. Cellular Therapies in Extremity Injury Clinical Trials**

Official Title	ClinicalTrials.gov Identifier	Status	Phase	Target Enrollment	Ages	Cell Type	Route of Administration	Primary Outcome Measure	Sponsor
A Multicenter, Randomized, Double-Blind, Placebo-Controlled, Parallel Group Study To Evaluate The Efficacy, Safety, And Tolerability Of Ixmyelocel-T In Subjects With Critical Limb Ischemia And No Options For Revascularization	NCT01483898	This study is ongoing, but not recruiting participants.	III	41	35 to 90 years	Ixmyelocel-T	Injection into ischemic muscle tissue	Amputation free survival (i.e., time to the first occurrence of either major amputation [above the talus] in the index leg or death) at 12 months post-injection	Vericel Corporation, USA
A Multi-Centre Phase I/II Safety and Tolerability Study Following the Infusion of Expanded Autologous Progeny of an Adult CD34 <sup>+</sup> Stem Cell Subset to Patients With Recent Tibial Fractures	NCT00632034	The recruitment status of this study is unknown because the information has not been verified recently.	I/II	32	17 to 75 years	CD34 <sup>+</sup> stem cell	Infusion into the tibial artery	Incidence of adverse events	Imperial College London, UK
An Open-label, Non-Randomized, Patient Funded, Multi-Center Study to Assess the Safety and Effects of Autologous Adipose-Derived Stromal Cells Via Intramuscular Injections for the Treatment of Critical Limb Ischemia	NCT02099500	This study is currently recruiting participants.	I/II	200	18 years and older	ASC	Injection into ischemic muscle tissue	Incidence of adverse events and improvement from baseline in perfusion as measured by ankle-brachial index and collateral artery number	Ageless Regenerative Institute, USA
An Open-label Single Arm Phase 2 Proof of Concept Study to Assess the Efficacy and Safety of ASCT01 in Patients With Critical Limb Ischemia	NCT01867190	This study is currently recruiting participants.	I/II	24	18 to 80 years	ASCT01	IV + injection into ischemic muscle tissue	Safety and efficacy with a primary endpoint of major amputation (i.e., above the ankle) or persisting critical limb ischemia (i.e., no clinical or perfusion improvement)	Lifecells, LLC., USA
A Phase 1 Clinical Study to Evaluate the Safety of Allogeneic Adipose-derived Stem Cells in the Subjects With Deep Second-degree Burn Wound	NCT02394873	This study is currently recruiting participants.	I	5	18 years and older	ADSC	Topical dressing	Incidence of adverse events	Anterogen Co., Ltd., South Korea
A Phase I/II Study of Human Cord Blood Mononuclear Cells and Human Umbilical Cord Mesenchymal Stem Cells Transplantation in Patients With Acute Burn	NCT01443689	The recruitment status of this study is unknown because the information has not been verified recently.	I/II	20	18 to 65 years	UC-MSC + UC-BMMNCs	N/A	Ratio of wound contraction and re-epithelialisation, healing time, Vancouver scar scale scores	Shenzhen Beike Bio-Technology Co., Ltd., China
A Prospective, Multicentric, Phase I/II, Open Label, Randomized, Interventional Study to Evaluate the Safety and Efficacy of Intramuscular and Intravenous Administration of Autologous ADMSCS for Treatment of Critical Limb Ischemia	NCT02145897	This study is currently recruiting participants.	I/II	60	18 to 65 years	Adipose-derived Stromal Vascular Fraction	Intramuscular injection	Incidence of adverse events	Kasiak Research Pvt. Ltd., India
A Radiographic and Clinical Outcomes Study Evaluating map3 <sup>®</sup> Cellular Allogeneic Bone Graft in Patients Undergoing Bone Grafting in the Foot/Ankle	NCT02161016	This study has been terminated.	IV	1	18 to 80 years	map3 <sup>®</sup> Cellular Allogeneic Bone Graft + stem cells	N/A	The American Orthopaedic Foot and Ankle Society (AOFAS) foot-and-ankle Score	RTI Biologics, USA
A Randomized, Controlled, Parallel Group, Blinded, Feasibility Study of the TGI Adipose-derived Stromal Cell (ASC)-Coated ePTFE Vascular Graft for Femoral-	NCT01305863	This study is ongoing, but not recruiting	I/II	60	18 years and older	ASC	Cells are soded onto the internal lumen of the vascular graft prior to	Graft patency will be measured by duplex ultrasound	Tissue Genesis, Inc., USA

tibial Bypass Grafting		participants.					implantation		
A Randomized, Double-Blind, Controlled Study to Evaluate the Effectiveness of the Use of Bone Marrow-Derived Mesenchymal Stem Cells in Fibrin in the Treatment of Chronic Wounds	NCT01751282	This study is ongoing, but not recruiting participants.	I	66	18 years and older	BMMSC + fibrin spray	N/A	Wound closure	Roger Williams Medical Center, USA
A Randomized, Double Blind, Multicentric, Placebo Controlled, Single Dose, Phase - i/ii Study Assessing the Safety and Efficacy of Intramuscular ex Vivo Cultured Adult Allogenic Mesenchymal Stem Cells in Patients With Critical Limb Ischemia	NCT00883870	This study has been completed.	I/II	20	18 to 60 years	MSC	Intramuscular injection	Incidence of adverse events and symptomatic relief	Stempeutics Research Pvt Ltd., India
Autologous Immunomagnetic Selected cd133+ Cells in the Treatment of No-option Critical Limb Ischemia: Clinical and Ceus Assessed Results	NCT01595776	This study has been completed.	I/II	8	18 to 70 years	EPC	Intramuscular injection	Improved contrast enhanced ultrasound	IRCCS Policlinico S. Matteo, Italy
Autologous Implantation of Mesenchymal Stem Cells for the Treatment of Distal Tibial Fractures	NCT00250302	This study has been completed.	I/II	24	18 to 65 years	BMMSC	Implantation	Safety and number of patients reaching clinical union of fracture	Hadassah Medical Organization, Israel
Autologous Stem Cell Therapy for Fracture Non-union Healing	NCT02177565	This study has been completed.	N/A	35	18 to 76 years	BMSC	Bone graft	Radiological assessment of new callus and fracture bridging	Robert Jones and Agnes Hunt Orthopaedic and District NHS Trust, UK
Cell Therapy With Mesenchymal Stem Cell in Ischemic Limb Disease	NCT02336646	This study is currently recruiting participants.	I	18	20 to 80 years	BMMSC	Intramuscular injection	Incidence of adverse events	Taiwan Bio Therapeutics Co., Ltd., Taiwan
Clinical Trial Phase I/II, Multicentre, Open, Randomized Study of the Use of Mesenchymal Stem Cells From Adipose Tissue (CeTMAd) as Cell Regeneration Therapy in Critical Chronic Ischemic Syndrome of Lower Limb in Nondiabetic Patients	NCT01745744	This study is ongoing, but not recruiting participants.	I/II	33	18 to 89 years	AdMSC	IV	Incidence of adverse events	Andalusian Initiative for Advanced Therapies - Fundación Pública Andaluza Progreso y Salud, Spain
Effect of Bone Marrow-derived Mesenchymal Stem Cell Transplantation in Reconstructing Human Bone Defects	NCT01206179	This study has been completed.	I	6	12 to 75 years	MSC	Injection	Radiological union of fracture	Royan Institute, Iran
Effects of Adipose Tissue Derived Stem Cells Implantation in Patients With Critical Limb Ischemia	NCT01663376	This study has been completed.	I/II	20	20 to 80 years	AdMSC	N/A	Incidence of adverse events	K-Stemcell Co Ltd., South Korea
Effectiveness of Adipose Tissue Derived Mesenchymal Stem Cells as Osteogenic Component in Composite Grafts Versus Acellular Bone Graft Substitutes for Augmentation in the Treatment of Proximal Humeral Fractures as Model for Fractures of Osteoporotic Bone - a Prospective Randomized First in Men Proof of Principle Trial	NCT01532076	This study has been terminated.	II	8	50 years or older	Stromal vascular fraction	Implantation	Development of secondary dislocation	University Hospital, Switzerland
Evaluation the Safety and Efficacy of Allogeneic Mesenchymal Stem Cell Transplantation in Tibial Closed Diaphyseal Fractures	NCT02140528	This study is currently recruiting participants.	II	40	18 to 65 years	AdMSC	Injection	Number of patients with union of fracture	Royan Institute, Iran
Evaluation the Side Effects of Repeated Bone Marrow Derived Mono Nuclear Stem Cells Transplantation in Patients With Lower Limb Ischemic Ulcer	NCT01480414	This study has been completed.	I/II	20	20 to 62 years	BMMNC	Intramuscular injection	Incidence of adverse events	Royan Institute, Iran
Evaluation the Treatment of Nonunion of Long Bone	NCT01958502	This study is	II	18	18 to 60 years	MSC +	Implantation	Clinical and radiological	Emdadi Kamyab

Fracture of Lower Extremities (Femur and Tibia) Using Mononuclear Stem Cells From the Iliac Wing Within a 3-D Tissue Engineered Scaffold		currently recruiting participants.				BMP2 + collagen scaffold		union of fracture	Hospital, Iran
Feasibility Study for Fibroblast Autologous Skin Grafts: Biopsy of Skin Fibroblasts, Expansion in Cell Therapy Core, Topical Injection of Fibroblasts, and Subsequent Removal of Graft for Laboratory Studies	NCT01964859	This study is currently recruiting participants.	I	20	18 to 65 years	Skin fibroblasts	Injection	Epidermal thickening	Johns Hopkins University, USA
Human Craniomaxillofacial Allotransplantation	NCT01889381	This study is currently recruiting participants.	II	15	18 to 60 years	BM cells	N/A	Post-operative graft survival	Johns Hopkins University, USA
Human Upper Extremity Allotransplantation	NCT01459107	This study is currently recruiting participants.	II	30	18 to 69 years	BM cells	N/A	Post-operative graft survival	Johns Hopkins University, USA
Intra-arterial Infusion of Autologous Bone Marrow Mononuclear Cells in Patients With Chronic Critical Limb Ischemia: a Randomized, Placebo-controlled Clinical Trial	NCT00371371	This study has been completed.	I/II	160	18 years and older	BMMNC	IV	Incidence of major amputation	UMC Utrecht, Netherlands
MarrowStim PAD Kit for the Treatment of Critical Limb Ischemia (CLI) in Subjects With Severe Peripheral Arterial Disease (PAD)	NCT01049919	This study is ongoing, but not recruiting participants.	N/A	152	21 years and older	BMAC	Injection into ischemic muscle tissue	Time to treatment failure (i.e., major amputation of the index limb or death)	Biomet Biologics, LLC, USA
Mesenchymal Stem Cells; Donor and Role in Management and Reconstruction of Nonunion Fracture	NCT01626625	This study is currently recruiting participants.	I	10	18 to 55 years	MSC	N/A	Radiological union of fracture	Indonesia University, Indonesia
Monocentric Randomized Study for the Therapy of Critic Limb Ischemia With Bone Marrow- or Peripheral Blood-derived Stem Cells	NCT02454231	This study is currently recruiting participants.	II/III	38	40 years and older	BMMNC	Intramuscular Injection	Incidence of adverse events and changes in ischemic perfusion	University of Florence, Italy
Mononucleotide Autologous Stem Cells and Demineralized Bone Matrix in the Treatment of Non Union/Delayed Fractures	NCT01435434	This study is not yet open for participant recruitment.	N/A	N/A	18 to 65 years	MSC	Injection	Clinical and radiological union of fracture	Hadassah Medical Organization, Israel
Multicenter Phase II, Randomized Open Clinical Trial on the Therapeutic Use of Intra-arterial Infusion of Autologous Bone Marrow Mononuclear Cells in Non-diabetic Patients With Critical Chronic Ischemia of Lower Limbs	NCT01408381	This study is ongoing, but not recruiting participants.	II	44	18 to 89 years	BMNC	IV	Incidence of adverse events	Andalusian Initiative for Advanced Therapies - Fundación Pública Andaluza Progreso y Salud, Spain
Multicentric Study of the Autologous Bone Marrow-derived Mononuclear Cells Injection for Treatment of the Patients With Critical Lower Extremity Ischemia	NCT01903044	This study is not yet open for participant recruitment.	I/II	60	18 to 75 years	BMMNC	Intramuscular injection	Wound healing	Pontifícia Universidade Católica do Paraná, Brazil
Phase I, Arteriocyte Magellan MAR01 Therapy - Compartment Syndrome and Battlefield Trauma Study Protocol	NCT01837264	This study is currently recruiting participants.	I	30	18 to 65 years	BMAC + PRP gel	N/A	Time to treatment failure (i.e., infection rate, wound or therapy-related complications, or amputation) or death	Arteriocyte, Inc., USA
Phase I, Non-Randomized, Feasibility Study for the Use of Bone Marrow Cell Concentrate Prepared Using the Magellan System for the Treatment of Critical Limb Ischemia	NCT01386216	This study is ongoing, but not recruiting participants.	I	20	18 to 85 years	BMHSC concentrate + PRP gel	Intramuscular injection	Time to treatment failure (i.e., defined as major amputation) or death	Arteriocyte, Inc., USA

Phase I Study of A Combination Stem Cell Therapy is Safe and Feasible in the Development of Mature Stable Vessels in Ischemic Limbs	NCT00518401	This study has been completed.	I	10	18 years and older	MESENDO (MSC + EPC)	Intramuscular Injection	Incidence of adverse events	TCA Cellular Therapy, USA
Phase II Efficacy Study of Intramuscular Autologous Bone Marrow Mononuclear Cells Plus Mesenchymal Stem Cell Implantation Versus Autologous Bone Marrow Mononuclear Cells Implantation Only in Patients With Chronic Critical Limb Ischemia	NCT01456819	This study is currently recruiting participants.	II	50	20 years and older	BMMSC	Intramuscular injection	Change in angiogenesis as measured by peripheral pulses, capillary refill, and transcutaneous oxygen saturation	National University of Malaysia, Malaysia
Phase II Safety/Efficacy Study of A Combination Stem Cell Therapy That Develops Mature Stable Vessel Formation in Ischemic Limbs	NCT00721006	This study has been completed.	II	35	19 years and older	MESENDO (MSC + EPC)	Subcutaneous injections	Enhancement of vessel formation accessed by Nuclear Perfusion Scan	TCA Cellular Therapy, USA
Pivotal Study of the Safety and Effectiveness of Autologous Bone Marrow Aspirate Concentrate (BMAC) for the Treatment of Critical Limb Ischemia Due to Peripheral Arterial Disease	NCT01245335	This study is ongoing, but not recruiting participants.	III	210	18 years and older	BMAC	Intramuscular injection	Amputation free survival time	Harvest Technologies, USA
Potency of Allogenic Bone Marrow, Umbilical Cord, Adipose Mesenchymal Stem Cell for Non Union Fracture and Long Bone Defect, Directly and Cryopreserved	NCT02307435	This study is currently recruiting participants.	0	9	19 to 30 years	AdMSC, BMMSC, + AdMSC	Implantation	Cell viability	Indonesia University, Indonesia
Stem Cell Therapy to Improve Burn Wound Healing	NCT02104713	This study is currently recruiting participants.	I	20	18 years and older	MSC	N/A	Incidence of adverse events (i.e., blistering, inflammation, and rash)	Dr. E. Badiavas, USA
The Combined Effect of Mesenchymal Stem Cell, HA-CaSO4,BMP-2, and Implant in Inducing The Healing of Critical-Sized Bone Defect	NCT01725698	The recruitment status of this study is unknown because the information has not been verified recently.	I	5	17 to 65 years	MSC, HA-CaSO <sub>4</sub> ,+ BMP-2	N/A	Radiological union scale (RUST Score) as a measure of bone union	Indonesia University, Indonesia
The Efficacy of Mesenchymal Stem Cells for Stimulate the Union in Treatment of Non-united Tibial and Femoral Fractures in Shahid Kamyab Hospital	NCT01788059	This study has been completed.	II	19	18 to 60 years	MSC	Intramuscular injection	Clinical and radiological union of fracture	Emdadi Kamyab Hospital, Iran
The Pittsburgh Protocol in Human Upper Extremity Allotransplantation	NCT00722280	This study is currently recruiting participants.	N/A	300	18 to 60 years	BMSCs	N/A	Graft survival	University of Pittsburgh, USA
The Use of Autogenous Adult Stem Cells in the Treatment of Critical Ischemia	NCT00488020	The recruitment status of this study is unknown because the information has not been verified recently.	I	10	30 to 80 years	BMNC	Intramuscular injection	Improved pain and healing of ischemic ulcers	Instituto de Molestias Cardiovasculares, Brazil
Treatment of Atrophic Nonunion Fractures by Autologous Mesenchymal Stem Cell Percutaneous Grafting. A Randomized, Double-blind, Controlled Study	NCT01429012	This study is not yet open for participant recruitment.	II	40	18 years and older	MSC	Injection	Incidence of adverse events and proportion of patients that develop a partial or complete callus	University Hospital of Liege, Belgium
Treatment of Long Bone Nonunion With Autologous Bone Marrow Stem Cells	NCT01581892	The recruitment status of this study is unknown because the information has	I/II	30	18 years and older	Mononuclear stem cells	Implantation	Incidence of adverse events	Hospital Universitario Central de Asturias, Spain

Treatment of Refractory Non-union Fractures by Pre-osteoblast Cells Grafting: A Pilot Study	NCT00916981	not been verified recently. This study has been completed.	I/II	30	18 years and older	BMSC	Injection	Radiological union of fracture	Jean-Philippe Hauzeur, Belgium
Treatment of Severe Limb Ischemia With Autologous Bone Marrow Derived Mononuclear Cells	NCT00442143	The recruitment status of this study is unknown because the information has not been verified recently.	I	10	20 to 85 years	BMMSC	Implantation	Improvement in transcutaneous oxygen pressure, 1 <sup>st</sup> toe blood pressure, ankle blood pressure, wound healing, and pain	Odense University Hospital, Denmark
Use of Autologous Bone Marrow Derived Mesenchymal Stromal Cells in Combination With Platelet Lysate Product for Human Long Bone Nonunion Treatment, A Phase 2-3 Clinical Trial	NCT02448849	This study is currently recruiting participants.	II/III	60	18 to 65 years	BMMSC + BMSStC	Percutaneous injection	Clinical and radiological union of fracture	Royan Institute, Iran
Use of Autologous Platelet Rich Plasma (PRP) Gel as an Adjunct to the Treatment of Deep 2nd and 3rd Degree Burns	NCT01843686	This study is currently recruiting participants.	I	42	18 to 86 years	PRP gel	Cutaneous application	Safety and incidence of adverse events	Arteriocyte, Inc., USA