

**Additional File 1.** Summary of registered clinical studies involving umbilical cord-derived MSCs.

<b>Title</b>	<b>Start Date</b>	<b>URL</b>
Pilot Study of Umbilical Cord Blood Transplantation in Adult Patient With Advanced Hematopoietic Malignancies	Oct-02	<a href="#">NCT00514722</a>
Safety and Efficacy Study of Umbilical Cord Blood-Driven Mesenchymal Stem Cells to Promote Engraftment of Unrelated Hematopoietic Stem Cell Transplantation	Aug-08	<a href="#">NCT00823316</a>
Allogeneic Umbilical Cord Mesenchymal Stem Cell Transplantation for Type 1 Diabetes With Diabetic Ketoacidosis	Jan-09	<a href="#">NCT02763423</a>
Safety and Efficacy of Stem Cell Therapy in Patients With Autism	Mar-09	<a href="#">NCT01343511</a>
Safety and Efficacy of Human Mesenchymal Stem Cells for Treatment of Liver Failure	Mar-09	<a href="#">NCT01218464</a>
Umbilical Cord Mesenchymal Stem Cells for Patients With Liver Cirrhosis	May-09	<a href="#">NCT01220492</a>
Allogeneic Mesenchymal Stem Cell for Graft-Versus-Host Disease Treatment	Sep-09	<a href="#">NCT00749164</a>
Mesenchymal Stem Cells Treat Liver Cirrhosis	Oct-09	<a href="#">NCT01233102</a>
Safety and Efficacy of Umbilical Cord Mesenchymal Stem Cell Therapy for Patients With Hereditary Ataxia	Jan-10	<a href="#">NCT01360164</a>
Safety and Efficacy of Umbilical Cord Mesenchymal Stem Cell Therapy for Patients With Progressive Multiple Sclerosis and Neuromyelitis Optica	Jan-10	<a href="#">NCT01364246</a>
Safety and Efficacy Study of Umbilical Cord/Placenta-Derived Mesenchymal Stem Cells to Treat Myelodysplastic Syndromes	May-10	<a href="#">NCT01129739</a>
Intratracheal Umbilical Cord-derived Mesenchymal Stem Cells for Severe Bronchopulmonary Dysplasia	Jul-10	<a href="#">NCT01207869</a>
Safety and Efficacy Study of Umbilical Cord/Placenta-Derived Mesenchymal Stem Cells to Treat Severe Aplastic Anemia	Aug-10	<a href="#">NCT01182662</a>
Stem Cell Therapy for Type 1 Diabetes Mellitus	Aug-10	<a href="#">NCT01143168</a>
Umbilical Cord Mesenchymal Stem Cells Infusion for Ulcerative Colitis	Sep-10	<a href="#">NCT01221428</a>
Umbilical Cord Mesenchymal Stem Cells Infusion for Initial Type 1 Diabetes Mellitus	Sep-10	<a href="#">NCT01219465</a>
Umbilical Cord Mesenchymal Stem Cells Infusion Via Hepatic Artery in Cirrhosis Patients	Oct-10	<a href="#">NCT01224327</a>
Intramuscular Injection of Mesenchymal Stem Cell for Treatment of Children With Idiopathic Dilated Cardiomyopathy	Oct-10	<a href="#">NCT01219452</a>
Human Umbilical Cord Mesenchymal Stem Cells Transplantation for Patients With Decompensated Liver Cirrhosis	Oct-10	<a href="#">NCT01342250</a>
Safety and Efficacy Study of Umbilical Cord/Placenta-Derived Mesenchymal Stem Cells to Treat Ankylosing Spondylitis (AS)	Jan-11	<a href="#">NCT01420432</a>

Umbilical Cord Mesenchymal Stem Cells Injection for Diabetic Foot	Jan-11	<a href="#">NCT01216865</a>
Allogenic Stem Cell Therapy in Patients With Acute Burn	Jul-11	<a href="#">NCT01443689</a>
Safety and Efficacy Study of Umbilical Cord/Placenta-Derived Mesenchymal Stem Cells to Treat Type 2 Diabetes	Jul-11	<a href="#">NCT01413035</a>
Safety and Efficacy of Umbilical Cord Mesenchymal Stem Cell Therapy for Patients With Duchenne Muscular Dystrophy	Oct-11	<a href="#">NCT01610440</a>
Umbilical Cord Mesenchymal Stem Cells for Patients With Autoimmune Hepatitis	Oct-11	<a href="#">NCT01661842</a>
Umbilical Cord Mesenchymal Stem Cells for Patients With Primary Biliary Cirrhosis	Oct-11	<a href="#">NCT01662973</a>
A New Method to Treat Hereditary Cerebellar Ataxia - Umbilical Cord Mesenchymal Stem Cells Transplantation	Dec-11	<a href="#">NCT01489267</a>
Umbilical Cord Derived Mesenchymal Stem Cells Transplantation for Active and Refractory Systemic Lupus Erythematosus	Jan-12	<a href="#">NCT01741857</a>
Umbilical Cord Blood-derived Mesenchymal Stem Cells for the Treatment of Steroid-refractory Acute or Chronic Graft-versus-host-disease	Jan-12	<a href="#">NCT01549665</a>
UC-MSCs Gel Treatment Difficult Healing of Skin Ulcers	Jan-12	<a href="#">NCT02685722</a>
MSCs Source of Sweat Gland Cells of Large Area Skin Injury Patients Transplant of the Wound	Jan-12	<a href="#">NCT02669199</a>
Phase 2 Study of Human Umbilical Cord Derived Mesenchymal Stem Cell for the Treatment of Lupus Nephritis	Feb-12	<a href="#">NCT01539902</a>
Human Mesenchymal Stem Cells Induce Liver Transplant Tolerance	Feb-12	<a href="#">NCT01690247</a>
Safety and Efficiency of Umbilical Cord-derived Mesenchymal Stem Cells(UC-MSC) in Patients With Alzheimer's Disease	Mar-12	<a href="#">NCT01547689</a>
The Clinical Trial on the Use of Umbilical Cord Mesenchymal Stem Cells in Amyotrophic Lateral Sclerosis	Mar-12	<a href="#">NCT01494480</a>
Stem Cell Therapy Combined Hormone Replacement Therapy in Patients With Premature Ovarian Failure	Mar-12	<a href="#">NCT01742533</a>
Umbilical Cord Mesenchymal Stem Cell Treatment for Crohn's Disease	Jun-12	<a href="#">NCT02445547</a>
Safety and Efficacy of Human Umbilical Cord Derived Mesenchymal Stem Cells for Treatment of HBV-related Liver Cirrhosis	Sep-12	<a href="#">NCT01728727</a>
Umbilical Cord Mesenchymal Stem Cells Transplantation Combined With Plasma Exchange for Patients With Liver Failure	Nov-12	<a href="#">NCT01724398</a>
Safety and Efficacy of UC-MSC in Patients With Acute Severe Graft-versus-host Disease	Dec-12	<a href="#">NCT01754454</a>
Randomized Clinical Trial of Intravenous Infusion Umbilical Cord Mesenchymal Stem Cells on Cardiopathy	Dec-12	<a href="#">NCT01739777</a>
Mesenchymal Stem Cells to Treat Type II Diabetes	Jan-13	<a href="#">NCT02302599</a>

Umbilical Cord Mesenchymal Stem Cells for Immune Reconstitution in HIV-infected Patients	Jan-13	<a href="#">NCT01213186</a>
Safety and Efficacy Study of Umbilical Cord-Derived Mesenchymal Stem Cells for Rheumatoid Arthritis	Apr-13	<a href="#">NCT01547091</a>
Safety and Efficacy of Diverse Mesenchymal Stem Cells Transplantation for Liver Failure	Jul-13	<a href="#">NCT01844063</a>
Umbilical Cord Derived Mesenchymal Stromal Cells For The Treatment of Severe Steroid-resistant Graft Versus Host Disease	Sep-13	<a href="#">NCT02032446</a>
Umbilical Cord Derived Mesenchymal Stem Cells Therapy in Hypoxic Ischemic Encephalopathy	Sep-13	<a href="#">NCT01962233</a>
Umbilical Cord Tissue-derived Mesenchymal Stem Cells for Rheumatoid Arthritis	Oct-13	<a href="#">NCT01985464</a>
Umbilical Cord Derived Mesenchymal Stem Cells Therapy in Ischemic Cardiomyopathy	Oct-13	<a href="#">NCT01946048</a>
Treatment Protocol of Child SAA With the Injection of Umbilical Cord Derived Mesenchymal Stem Cells	Oct-13	<a href="#">NCT02218437</a>
Efficacy of Umbilical Cord Mesenchymal Stem Cells in Duchenne Muscular Dystrophy	Nov-13	<a href="#">NCT02285673</a>
Safety and Feasibility Study of Mesenchymal Trophic Factor (MTF) for Treatment of Osteoarthritis	Dec-13	<a href="#">NCT02003131</a>
Umbilical Cord Mesenchymal Stem Cells Transplantation to Patients With Spinal Cord Injury	Jan-14	<a href="#">NCT02481440</a>
Feasibility Study of Human Umbilical Cord Tissue-Derived Mesenchymal Stem Cells in Patients With Multiple Sclerosis	Jan-14	<a href="#">NCT02034188</a>
Umbilical Cord Mesenchymal Stem Cells Injection for Diabetes Secondary Peripheral Arterial Disease	Feb-14	<a href="#">NCT02287831</a>
Allogeneic Umbilical Cord Mesenchymal Stem Cell Therapy for Autism	Jul-14	<a href="#">NCT02192749</a>
Safety and Feasibility Study of Intranasal Mesenchymal Trophic Factor (MTF) for Treatment of Asthma	Jul-14	<a href="#">NCT02192736</a>
Mesenchymal Stem Cells Transplantation for Ischemic-type Biliary Lesions	Jul-14	<a href="#">NCT02223897</a>
Allogenic Mesenchymal Stem Cell for Bone Defect or Non Union Fracture	Aug-14	<a href="#">NCT02307435</a>
Allogeneic Human Umbilical Cord Mesenchymal Stem Cells for a Single Male Patient With Duchenne Muscular Dystrophy (DMD)	Sep-14	<a href="#">NCT02235844</a>
Clinical Study of Umbilical Cord Tissue Mesenchymal Stem Cells (UC-MSC) for Treatment of Osteoarthritis	Sep-14	<a href="#">NCT02237846</a>
Safety and Feasibility Study of Cell Therapy in Treatment of Spinal Cord Injury	Sep-14	<a href="#">NCT02237547</a>
A Study on Radiation-induced Pulmonary Fibrosis Treated With Clinical Grade Umbilical Cord Mesenchymal Stem Cells	Oct-14	<a href="#">NCT02277145</a>
Treatment of Infertility by Collagen Scaffold Loaded With Umbilical Cord Derived Mesenchyma Stem Cells	Nov-14	<a href="#">NCT02313415</a>

Human Umbilical Cord Mesenchymal Stem Cell Transplantation in Articular Cartilage Defect	Dec-14	<a href="#">NCT02291926</a>
Human Umbilical Cord Stroma MSC in Myocardial Infarction	Feb-15	<a href="#">NCT02323477</a>
A Study of Allogeneic Human UC-MSC and Liberation Therapy (When Associated With CCSVI) in Patients With RRMS	Feb-15	<a href="#">NCT02587715</a>
A Study of Allogeneic Human UC-MSC and Liberation Therapy (When Associated With CCSVI) in Patients With RRMS	Feb-15	<a href="#">NCT02418325</a>
Evaluation of the Safety and Potential Therapeutic Effects After Intravenous Transplantation of Cordstem-ST in Patients With Cerebral Infarction	Feb-15	<a href="#">NCT02378974</a>
Human Umbilical Cord Mesenchymal Stem Cell in Cerebral Hemorrhage Sequela	Mar-15	<a href="#">NCT02283879</a>
Safety and Efficacy of UC-MSCs in Patients With Psoriasis Vulgaris	Apr-15	<a href="#">NCT02491658</a>
Human Umbilical-Cord-Derived Mesenchymal Stem Cell Therapy in Acute Lung Injury	May-15	<a href="#">NCT02444455</a>
Human Umbilical-Cord-Derived Mesenchymal Stem Cell Therapy in Ischemic Cardiomyopathy	May-15	<a href="#">NCT02439541</a>
Human Umbilical-Cord-Derived Mesenchymal Stem Cell Therapy in Active Ulcerative Colitis	May-15	<a href="#">NCT02442037</a>
Human Umbilical-Cord-Derived Mesenchymal Stem Cell Therapy in Paraquat Poisoning Induced Lung Injury	May-15	<a href="#">NCT02444858</a>
Efficacy of Stem Cell Therapy in Ambulatory and Non-ambulatory Children With Duchenne Muscular Dystrophy - Phase 1-2	Jun-15	<a href="#">NCT02484560</a>
Collagen Scaffolds Loaded With HUCMSCs for the Improvement of Erectile Function in Men With Diabetes	Sep-15	<a href="#">NCT02579148</a>
Injectable Collagen Scaffold, Combined With HUC-MSCs for the Improvement of Erectile Function in Men With Diabetes	Sep-15	<a href="#">NCT02745808</a>
Human Umbilical Cord-derived Mesenchymal Stem Cells With Injectable Collagen Scaffold Transplantation for Chronic Ischemic Cardiomyopathy	Oct-15	<a href="#">NCT02635464</a>
Transplantation of HUC-MSCs With Injectable Collagen Scaffold for POF	Oct-15	<a href="#">NCT02644447</a>
A Study to Assess Safety and Efficacy of Umbilical Cord-derived Mesenchymal Stromal Cells in Knee Osteoarthritis	Dec-15	<a href="#">NCT02580695</a>
Umbilical Cord Mesenchymal Stem Cells Infusion for Diabetes Related Vascular Complications	Jan-16	<a href="#">NCT02834858</a>
Human Umbilical Cord-Mesenchymal Stem Cells for Rheumatoid Arthritis	Jan-16	<a href="#">NCT02643823</a>
A Study on Pneumoconiosis Treated With Whole-lung Lavage Combined With Mesenchymal Stem Cells	Jan-16	<a href="#">NCT02668068</a>
Stem Cell Therapy Combined With NeuroRegen Scaffold in Patients With Erectile Dysfunction After Rectal Cancer Surgery	Jan-16	<a href="#">NCT02648386</a>
Umbilical Cord Derived Mesenchymal Stem Cells Treatment in Ischemic Stroke	Feb-16	<a href="#">NCT02580019</a>

Human Umbilical Cord Mesenchymal Stem Cells (HUC-MSCs) Transplantation in Women With Primary Ovarian Insufficiency (POI)	Feb-16	<a href="#">NCT03033277</a>
Human Umbilical Cord-Mesenchymal Stem Cells for Hepatic Cirrhosis	Mar-16	<a href="#">NCT02652351</a>
Stem Cells for Treatment of Bronchopleural Fistula	Apr-16	<a href="#">NCT02961725</a>
Safety and Exploratory Efficacy Study of UCMSCs in Patients With Ischemic Heart Disease (SEESUPIHD)	May-16	<a href="#">NCT02666391</a>
Injectable Collagen Scaffold Combined With HUC-MSCs Transplantation for Patients With Decompensated Cirrhosis	May-16	<a href="#">NCT02786017</a>
Safety and Exploratory Efficacy Study of Collagen Membrane With Mesenchymal Stem Cells in the Treatment of Skin Defects	May-16	<a href="#">NCT02672280</a>
Human Umbilical Cord-Mesenchymal Stem Cells for Pneumoconiosis	Jun-16	<a href="#">NCT02790762</a>
UC-MSC Infusion for HBV-Related Acute-on-Chronic Liver Failure	Jun-16	<a href="#">NCT02812121</a>
UCMSC Transplantation in the Treatment of Cartilage Damage	Jun-16	<a href="#">NCT02776943</a>
MsciSLE: MSCs in SLE Trial	Jul-16	<a href="#">NCT02633163</a>
Safety and Efficacy of Umbilical Cord Mesenchymal Stem Cell Local Intramuscular Injection for Treatment of Uterine Scars	Nov-16	<a href="#">NCT02968459</a>
Collagen Membrane Combined With HUC-MSCs Transplantation in Patients With Nasal Septum Perforation	Nov-16	<a href="#">NCT02947191</a>
Safety Study of Filler Agent Composed of Umbilical Cord Mesenchymal Stem Cells and Hyaluronic Acid	Dec-16	<a href="#">NCT02698813</a>
Umbilical Cord Derived Mesenchymal Stem Cells Therapy in Aplastic Anemia	Jan-17	<a href="#">NCT03055078</a>
Umbilical Cord Mesenchymal Stem Cells in Primary Sclerosing Cholangitis	Jan-17	<a href="#">NCT03516006</a>
Phase I Mesenchymal Stem Cells for Systemic Lupus Erythematosus	Apr-17	<a href="#">NCT03171194</a>
hCT-MSCs for Children With Autism Spectrum Disorder (ASD)	Jun-17	<a href="#">NCT03099239</a>
A Single-arm,Phase IIa,Safety and Efficacy Trial of Selected MSCs in the Treatment of Patients With PSC & AiH	Jun-17	<a href="#">NCT02997878</a>
Human Umbilical Cord Mesenchymal Stem Cell Therapy for Cerebral Infarction Patients in Convalescent Period.	Jul-17	<a href="#">NCT03176498</a>
The Study of Heart Failure With Human Umbilical Cord Mesenchymal Stem Cells (hUC-MSC)	Jul-17	<a href="#">NCT03180450</a>
The Study of Early Stage Osteonecrosis of Femoral Head With Human Umbilical Cord Mesenchymal Stem Cells	Jul-17	<a href="#">NCT03180463</a>
The Safety and Efficacy of Human Umbilical Cord Mesenchymal Stem Cells in the Treatment of Acute Cerebral Infarction	Jul-17	<a href="#">NCT03186456</a>
Research for Human Umbilical Cord Mesenchymal Stem Cells in the Treatment of Myelodysplastic Syndrome (MDS)	Jul-17	<a href="#">NCT03184935</a>

Umbilical Cord Derived Mesenchymal Stem Cells Therapy in Systemic Lupus Erythematosus	Aug-17	<a href="#">NCT03219801</a>
Allogenic Mesenchymal Stem Cells And Physical Therapy for MS Treatment	Sep-17	<a href="#">NCT03326505</a>
Safety and Exploratory Efficacy Study of UCMSCs in Patients With Alzheimer's Disease	Oct-17	<a href="#">NCT02672306</a>
Safety of Umbilical Cord Mesenchymal Stem Cell Local Intramuscular Injection for Treatment of Uterine Scars	Nov-17	<a href="#">NCT03181087</a>
Intrathecal Transplantation of UC-MSC in Patients With Late Stage of Chronic Spinal Cord Injury	Jan-18	<a href="#">NCT03505034</a>
Evaluating Safety and Efficacy of Mesenchymal Stem Cells From Umbilical Cord	Jan-18	<a href="#">NCT03358654</a>
Intrathecal Transplantation of UC-MSC in Patients With Early Stage of Chronic Spinal Cord Injury	Jan-18	<a href="#">NCT03521323</a>
Intrathecal Transplantation of UC-MSC in Patients With Sub-Acute Spinal Cord Injury	Jan-18	<a href="#">NCT03521336</a>
Umbilical Cord Mesenchymal Stem Cells Injection for Ocular Corneal Burn	Jan-18	<a href="#">NCT03237442</a>
The Safety/Efficacy of Umbilical Cord Mesenchymal Stem Cell Therapy for Patients With Healing Poor After Uterus Injury	Jan-18	<a href="#">NCT03386708</a>
The Safety/Efficacy of Human Umbilical Cord Mesenchymal Stem Cells Therapy for Patients With Osteoarthritis	Jan-18	<a href="#">NCT03383081</a>
The Maximum Tolerated Dose of Mesenchymal Stem Cells From Umbilical Cord	Jan-18	<a href="#">NCT03357770</a>
Repair of Acute Respiratory Distress Syndrome by Stromal Cell Administration (REALIST)	Mar-18	<a href="#">NCT03042143</a>
Assesment the Reconstruction of Motor Circuits in Nerve Fiber Injuries After the Treatment of Umbilical Cord Mesenchymal Stem Cells With Blood Oxygen Level-dependent Drived Diffusion Tensor Imaging	Mar-18	<a href="#">NCT03336996</a>
Transplantation of Umbilical Cord-derived Mesenchymal Stem Cells Via Different Routes	Apr-18	<a href="#">NCT03414697</a>
Intravenous Infusion of Umbilical Cord Tissue (UC) Derived Mesenchymal Stem Cells (MSCs) Versus Bone Marrow (BM) Derived MSCs to Evaluate Cytokine Suppression in Patients With Chronic Inflammation Due to Metabolic Syndrome.	Apr-18	<a href="#">NCT03059355</a>
Clinical Trial of Umbilical Cord Mesenchymal Stem Cell Transfusion in Decompensated Liver Cirrhosis	Jun-18	<a href="#">NCT03529136</a>
Clinical Study of Umbilical Cord Mesenchymal Stem Cells (UC- MSC) for Treatment of Knee Osteoarthritis	Oct-18	<a href="#">NCT03166865</a>