Non Patent Literature 6: Shi Y, et al: Immunoregulatory mechanisms of mesenchymal stem and stromal cells in inflammatory diseases. Nat Rev Nephrol, 2018
Non Patent Literature 7: Sasaki Y, et al: Synergic Effects of Rehabilitation and Intravenous Infusion of Mesenchymal Stem Cells After Stroke in Rats. Phys Ther 96:1791-1798, 2016

Summary

Technical Problem

[0007]

An object of the present invention is to provide a pharmaceutical composition for repairing and regenerating tissue, wherein the pharmaceutical composition can also be administered to a patient subjected to stenting and further provide a new method for preventing restenosis after PTAS and the recurrence of stroke or TIA accompanying it.

Solution to Problem

[0008]

The inventors built up the hypothesis that the intravenous administration of MSC would inhibit neointimal hyperplasia by suppressing the inflammatory reaction to the implanted stent struts using a porcine model. The inventors developed two types of bare metal stents in mini-pigs. One stent was implanted at the

common carotid artery (CCA) corresponding to the human middle cerebral artery (MCA), and the other stent was implanted into the superficial cervical artery (SCA) corresponding to the human CCA. Image analysis using angiography (DSA) and intravascular ultrasonography (IVUS) were performed. Histological findings including inflammatory changes around the stent struts after MSC administration were evaluated. The inventors confirmed that MSCs can also be administered to a patient subjected to stenting, and the progress of neointimal hyperplasia could, moreover, be suppressed in the CCA and the SCA subjected to stenting thereby.

[0008a]

In one aspect, the present disclosure refers to use of a composition in the manufacture of a medicament for repairing and regenerating tissue, wherein the composition comprises mesenchymal stem cells, wherein the medicament is to be administered to a patient subjected to stenting.

[0008b]

In one aspect, the present disclosure refers to use of a composition in the manufacture of a medicament for preventing in-stent restenosis, wherein the composition comprises mesenchymal stem cells, wherein the medicament is to be administered to a patient subjected to stenting.

[0009]

The present invention has been completed based on the above-mentioned findings, and relates to the following (1) to (15).

(1) A pharmaceutical composition for repairing and regenerating tissue, comprising mesenchymal stem cells, wherein the pharmaceutical composition is administered to a patient subjected to stenting.

(2) The pharmaceutical composition according to (1), wherein the patient is a patient who suffers from or has suffered from any disease selected from atherosclerosis, ischemic heart diseases including myocardial infarction, ischemic cerebrovascular diseases including cerebral infarction and transient ischemic attack (TIA), arteriosclerosis obliterans (ASO), Buerger's disease,

Claims

[Claim 1]

Use of a composition in the manufacture of a medicament for repairing and regenerating tissue, wherein the composition comprises mesenchymal stem cells, wherein the medicament is to be administered to a patient subjected to stenting.

[Claim 2]

The use according to claim 1, wherein the patient is a patient who suffers from or has suffered from any disease selected from atherosclerosis, ischemic heart diseases including myocardial infarction, ischemic cerebrovascular diseases including cerebral infarction and transient ischemic attack (TIA), arteriosclerosis obliterans (ASO), Buerger's disease, arteriosclerotic lesions in blood vessels of the whole body, dissecting lesions of vascular system including a dissecting aneurysm, and an aneurysm.

[Claim 3]

The use according to claim 1 or 2, wherein the stenting is carotid artery stenting (CAS) or percutaneous transluminal angioplasty and stenting (PTAS).

[Claim 4]

The use according to any one of claims 1 to 3, wherein 10^6 or more cells per dose are to be administered.

[Claim 5]

The use according to any one of claims 1 to 4, wherein the mesenchymal stem cells are mesenchymal stem cells derived from bone marrow or blood.

[Claim 6]

The use according to any one of claims 1 to 5, wherein the mesenchymal stem cells are mesenchymal stem cells derived from bone marrow or blood of the patient.

[Claim 7]

The use according to any one of claims 1 to 6, wherein the medicament prevents in-stent restenosis.

[Claim 8]

Use of a composition in the manufacture of a medicament for preventing in-stent restenosis, wherein the composition comprises mesenchymal stem cells, wherein the medicament is to be administered to a patient subjected to stenting.