

2022. January.18

For immediate Media Press Release

SAISEIKEN CO.,LTD.
(Collaboration with Smart Clinic Tokyo, Japan)

SAISEIKEN CO., LTD. succeed an exploratory clinical study to evaluate the Stem Cell from Human exfoliated Deciduous teeth derived Conditioned Medium (SHED-CM) for the treatment of amyotrophic lateral sclerosis (ALS)

SAISEIKEN Co., LTD (Headquarters: Chuo-ku, Ginza, 1-3-3 G1 building 7F, Japan) is advancing research and development of cell-based products that contribute to the health and well-being of society, such as dental pulp stem cells derived conditioned medium for regenerative medicine (Fig.1).

Today, we are very pleased to announce that we are performing an exploratory clinical study of SHED-CM for the treatment of amyotrophic lateral sclerosis (ALS) in Japan.

ALS is an intractable disease of unknown etiology that mainly develops after middle age and causes the degenerative loss of motor neurons, eventually leading to the loss of control of vital functions such as swallowing and breathing, resulting in death. Currently, ALS has no effective treatment, making it a disease with extremely high unmet medical needs that requires the development of new, effective treatments.

Dr. Minoru Ueda, Professor Emeritus of Nagoya University and his group have been performing a variety of experimental studies to evaluate SHED-CM for several neurodegenerative diseases using mice model , as such Alzheimer's disease(1), cerebral infarction (2) and autoimmune encephalomyelitis (3). SHED-CM contains a variety of growth factors,

including neurotrophic factors, which promote such effects as neuroprotection , axonal elongation, neurotransmission, and immunosuppression.

They demonstrated clear therapeutic effects of intravenous administration of SHED-CM to suppress motor nerve cell loss and motor function decline. Thus, SHED-CM is also expected to activate and repair nerve cells, making it a potential new treatment for ALS. Responding to unmet medical needs is the mission of SAISEIKENI, and our aim is to develop new treatments that will enhance the quality of life of patients with intractable diseases. The use of SHED-CM in clinical study for ALS is one of proposed indication of SHED-CM for treating human disease, following: Alzheimer's disease , cerebral infarction, acute liver injury, diabetes mellitus , and interstitial pneumonia (COVID-19). The SAISEIKEN is committed to improving the health and medical care of people around the world by developing healthcare businesses and products that will contribute to the realization of a healthy and secure society.

【Case Report】

In a 68-year-old male patient suffering from muscle weakness and fasciculation, progressive muscular atrophy, a variant of ALS, was diagnosed after extensive examinations ruling out other disease in April 2019 in Yokohama city hospital and followed by Kitasato university hospital from June 2020, then finally referred to our clinic in January 2021. In our clinic , the patient received transnasal and intravenous administration of the stem cell from human exfoliated deciduous teeth derived conditioned medium (SHED-CM) from Jan. 2021. The success of the therapy was followed by ALS functional rating score-revised (ALSFRS-R) and range of motion (ROM) in limbs and finally by electromyogram (EMG) of the affected muscle. Pulmonary function was monitored by SpO2 continuously in his home and by pulmonary function test (PFT) in university hospital.

Unexpected improvements occurred at one week after starting intravenous therapy with SHED-CM, passive ROM in limbs and active ROM in cervical

rotation expanded remarkably and continued this ameliorating for following 5 months (Fig.2, Table1). This ameliorated symptom in ROM confirmed the remission one of typical signs of ALS , spasticity contracture. We succeeded the clinical improvement in ROM in limbs and neck just one week after starting intravenous administration of SHED-CM.

It improved the patient's quality of life (QOL) and activities of daily life (ADL). During the period in this therapy we did not experience any adverse effects related to this therapy. On the contrary ALSFR-R and pulmonary function were kept stable.

Conclusion: The therapy described here may be a promising approach to treating some kinds of motor neuron disease, such as ALS and merits further evaluation in rigorous trials.

Fig. 1 : Cell culture and preparation of dental pulp stem cell derived conditioned medium.

Fig. 2 : Evaluation of range of motion (ROM)

Table1: Change of ROM

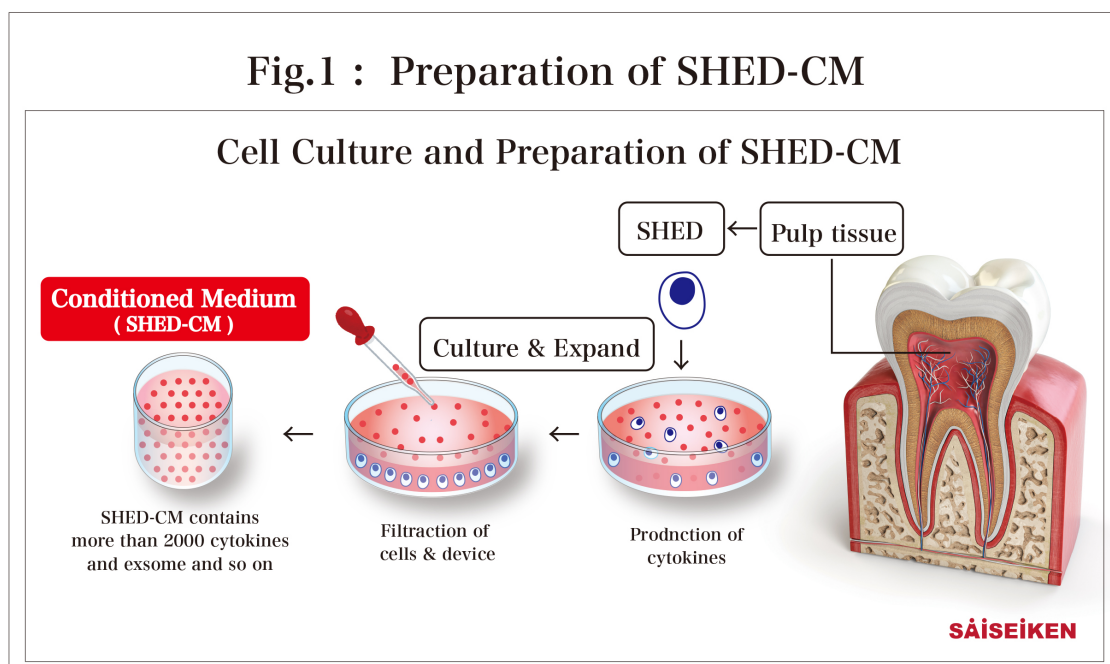


Fig.2 : Evaluation of range of motion (ROM)

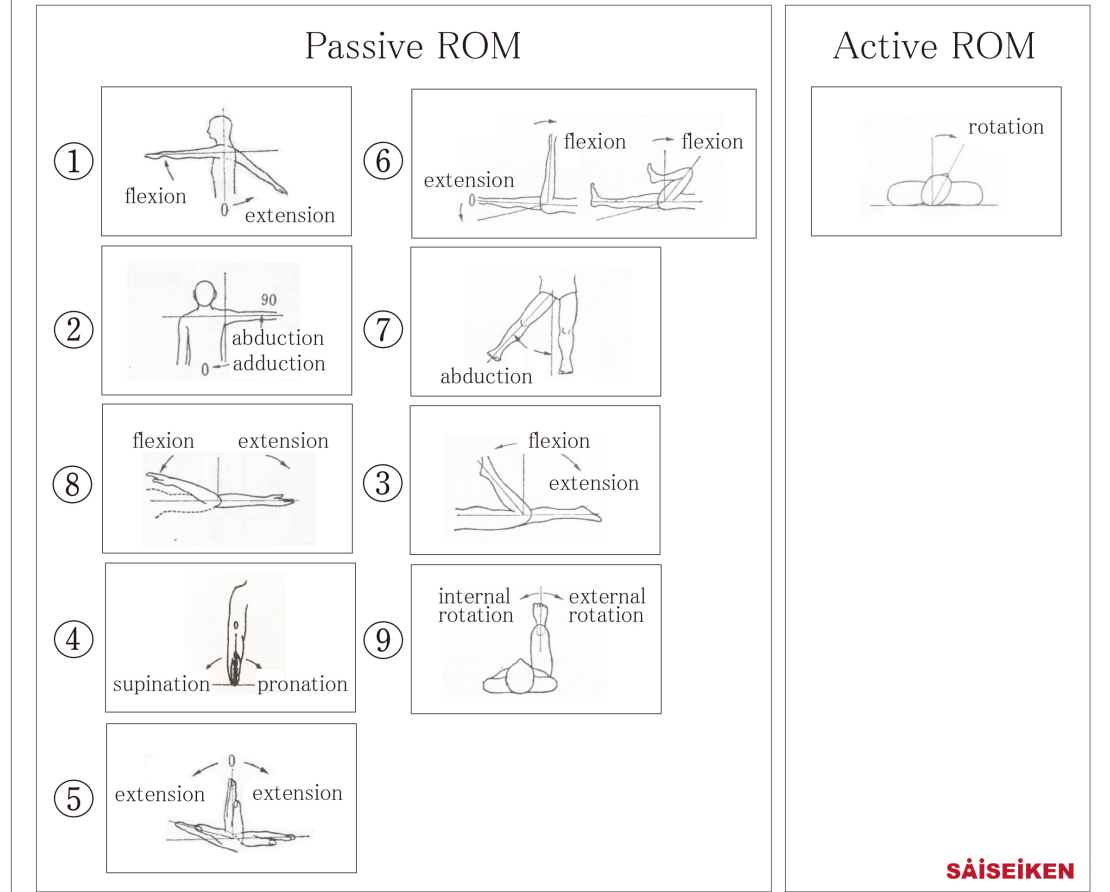


Table1 : Change of ROM

Passive ROM

	Site	Before	After
①	Shoulder forward flexion (R)	30	50
	(L)	40	60
②	Shoulder abduction (R)	25	35
	(L)	25	30
③	Elbow flexion (R)	50	90
	(L)	40	70
④	forearm supination (R)	-35	-5
	(L)	-45	-5
⑤	Wrist extension (R)	0	10
	(L)	-45	10
⑥	Hip flexion (R)	40	50
	(L)	35	60
⑦	hip abduction (R)	10	25
	(L)	15	25
⑧	hip external rotation (R)	10	20
	(L)	10	20
⑨	Knee flexion (R)	70	80
	(L)	70	85

Active ROM

Site	Before	After
Cervical rotation (R)	0	30

S&I SEIKEN

【References】

- (1) Mita,T. (2015) Conditioned medium from the stem cells of human dental pulp improve cognitive function in a mouse model of Alzheimer's disease. Behav. Brain. Res. 293: 189-197.
- (2) Inoue,T et al.(2013) Stem cells from human exfoliated deciduous tooth

derived conditioned medium enhance recovery of focal cerebral ischemia in rats. Tissue Eng.Part A 19:24-29.

(3) Shimojima,C. et al .(2016) Conditioned medium from the stem cells of human exfoliated deciduous teeth ameliorates experimental autoimmune encephalomyelitis. J.Immuno.196-8

(4) Ueda,M. et al. (2 0 2 2) . The first in case of amyotrophic lateral sclerosis treated With stem cell derived conditioned medium; A 1 year-follow up

(Neurology and Nerurorehabilitation, Jan.2022 submitted)

【 For inquiries regarding this matter 】

SAISEIKEN CO.,LTD.

Professor Emeritus of Nagoya University

Dr. Minoru Ueda

E-mail : pr@saisei-ken.com

HP : <https://saisei-ken.com>