SIMPOSIUM + LIVE DEMO

SERTIFIKAT

MATERI LIVE DEMO

- Optimizing micro-focused ultra sound for skin tightening
- Fullface filler augmentation using calcium hydroxylapatite + hyalu ronic acid
- Peeling threestep peel
- Tight sculpting with combination of Er: YAG and long-pulsed Nd:YAG 1064nm
- Laser for bromhidrosis : Long-Pulsed Nd:YAG 1064 nm
- Radiofrequency for circumcision
- Aqualic : Is aqualic an effective alternative for fat dissolving injection?
- Filler injection combined with microfocused ultra sound with visualization (MIFU) and Botulinum Toxin for periorbital area.

diberikan kepada

DR. Dr. Ago Harlim, MARS, SpKK

sebagai

SPEAKER

THE ART OF LASER AND ENERGY BASED DEVICES

IN DERMATOSES AND AESTHETIC MANAGEMENT

Alana Hotel Surakarta, 9 - 10 Desember 2017

SK SKP No. : 354/IDI/Wil-Jateng/SKP/XI/2017

Pembicara : 8 SKP
Moderator : 2 SKP

Peserta : 8 SKP
Panitia : 1 SKP

Ketua Panitia

Dr. Andreas Widiansyah, SpKK, FINSDV, FAADV

Ketua PERDOSKI Cabang Surakarta

Dr. M. Eko Irawanto, SpKK, FINSDV, FAADV

SIMPOSIUM & WORKSHOP

THE ART OF LASER AND ENERGY BASED DEVICES IN DERMATOSES & AESTHETIC MANAGEMENT

Nomor :14/Laser/PERDOSKI/S/X/17 Surakarta, 5 oktober 2017
Lampiran : -
Perihal : Permohonan Pembicara

Kepada Yth.
dr. Ago Harlim, SpKK
Di Tempat

Sehubungan akan diselenggarakan Simposium dan Workshop "*The Art of Laser and Energy Based Devices in Dermatoses & Aesthetic management* " Perhimpunan Dokter Spesialis Kulit & Kelamin Indonesia (Perdoski) Cabang Surakarta, Bagian Ilmu Kesehatan Kulit dan Kelamin FK UNS/RSUD Dr. Moewardi yang bekerjasama dengan Kelompok Studi Dermatologi Laser Indonesia (KSDLI). Acara dilaksanakan pada tanggal 8 Desember 2017 di RSUD Dr. Moewardi Surakarta dan 9-10 Desember 2017 di Hotel The Alana Solo. Dengan ini kami mohon kesediaannya untuk menjadi Pembicara Simposium dengan keterangan:

Topik	: *Benefit of Stem Cells in Laser Treatment for Rejuvenation and Anti Aging*
Hari dan tanggal	: Minggu, 10 Desember 2017
	Session IX: Miscellanous
Waktu	: Pukul 10.30-10.45 WIB

Atas kesediaan dan kerjasamanya disampaikan terima kasih.

Simposium dan Workshop
Ketua Panitia

dr. Andreas Widiansyah,Sp.KK,FINSDV,FAADV
NPA. 17 007 0967

Sekretaris

dr. Suci Widhiati, MSc, Sp.KK
NPA. 17 007 1038

sekretariat laser

surat permohonan pembicara

12 October 2017 13.03

Details

SL

To: Dr harlim xl xl xl, Cc: mayarayya56@gmail.com, damayantiwilla@yahoo.com

Kepada Yth.

dr. Ago Harlim, SpKK

Di Tempat

Sehubungan akan diselenggarakan Simposium dan Workshop "*The Art of Laser and Energy Based Devices in Dermatoses & Aesthetic management* " Perhimpunan Dokter Spesialis Kulit & Kelamin Indonesia (Perdoski) Cabang Surakarta, Bagian Ilmu Kesehatan Kulit dan Kelamin FK UNS/RSUD Dr. Moewardi yang bekerjasama dengan Kelompok Studi Dermatologi Laser Indonesia (KSDLI). Acara dilaksanakan pada tanggal 8 Desember 2017 di RSUD Dr. Moewardi Surakarta dan 9-10 Desember 2017 di Hotel The Alana Solo. Dengan ini kami mohon kesediaannya untuk menjadi Pembicara Simposium dengan keterangan:

Topik	: *Benefit of Stem Cells in Laser Treatment for Rejuvenation and Anti Aging*	
Hari dan tanggal	: Minggu, 10 Desember 2017	*Session IX: Miscellanous*
Waktu	: Pukul 10.30-10.45 WIB	

Atas kesediaan dan kerjasamanya disampaikan terima kasih.


THE ART OF
LASER AND
ENERGY BASED
DEVICES
IN DERMATOSES AND
AESTHETIC MANAGEMENT
Alana Hotel Surakarta, 9-10 December 2017
715
DR. Dr. Ago Harlim, MARS, SpKK
SPEAKER
BERNOFARM

Benefit of stem cells for rejuvenation and antiaging

Ago Harlim
Universitas Kristen Indonesia
Solo, 2017

Introduction
Stem cell is a cell that has ability to continuously divide, differentiate, and develop into various other kinds of cells/tissues. Stem cell nowadays is widely used for rejuvenation and anti aging therapy

Methods
We used adult stem cell which found in adipose tissue, which collected from liposuction, and then we made SVF (stromal vascular fraction) from the fat. The intravenous SVF injection technique used for anti aging therapy and some mixed with fat used for fat transfer as a aesthetic filler.

Result
Fat with SVF may improved the fat graft survival rate, producing longer lasting aesthetic result. SVF intravenous also can be used as anti aging therapy.

Conclusion
Stem cell as SVF can be used for rejuvenation and anti aging

Introduction

Stem cells have the ability to build every tissue in the human body, hence have great potential for future therapeutic uses in tissue regeneration and repair. In order for cells to fall under the definition of “stem cells,” they must display two essential characteristics. First, stem cells must have the ability of unlimited self-renewal to produce progeny exactly the same as the originating cell. This trait is also true of cancer cells that divide in an uncontrolled manner whereas stem cell division is highly regulated. Therefore, it is important to note the additional requirement for stem cells; they must be able to give rise to a specialized cell type that becomes part of the healthy animal.

The general designation, “stem cell” encompasses many distinct cell types. Commonly, the modifiers, “embryonic,” and “adult” are used to distinguish stem cells by the developmental stage of the animal from which they come, but these terms are becoming insufficient as new research has discovered how to turn fully differentiated adult cells back into embryonic stem cells and, conversely, adult stem cells, more correctly termed “somatic” stem cells meaning “from the body”, are found in the fetus, placenta, umbilical cord blood and infants. Therefore, this review will sort stem cells into two categories based on their biologic properties - pluripotent stem cells and multipotent stem cells. Their sources, characteristics, differentiation and therapeutic applications are discussed.

Pluripotent stem cells are so named because they have the ability to differentiate into all cell types in the body. In natural development, pluripotent stem cells are only present for a very short period of time in the embryo before differentiating into the more

specialized multipotent stem cells that eventually give rise to the specialized tissues of the body. These more limited multipotent stem cells come in several subtypes: some can become only cells of a particular germ line (endoderm, mesoderm, ectoderm) and others, only cells of a particular tissue. In other words, pluripotent cells can eventually become any cell of the body by differentiating into multipotent stem cells that themselves go through a series of divisions into even more restricted specialized cells.

Characteristic that identify Stem cells

Pluripotent

Since Federal funding for human embryonic stem cells is restricted in the United States, many scientists use the mouse model instead. Besides their ability to self-renew indefinitely and differentiate into cell types of all three germ layers, murine and human pluripotent stem cells have much in common. It should not be surprising that so many pluripotency traits are conserved between species given the shared genomic sequences and intra-cellular structure in mammals. Both mouse and human cells proliferate indefinitely in culture, have a high nucleus to cytoplasm ratio, need the support of growth factors derived from other live cells, and display similar surface antigens, transcription factors and enzymatic activity (i.e. high alkaline phosphatase activity). However, differences between mouse and human pluripotent cells, while subtle, are very important. Although the transcription factors mentioned above to induce pluripotency from adult cells (Oct3/4 and Sox2) are shared, the extracellular signals needed to regulate them differ. Mouse embryonic stem cells need the leukaemia inhibitory factor and bone morphogenic proteins while human require the signalling proteins Noggin and for sustained pluripotency. Surface markers used to identify pluripotent cells also differ slightly between the two species as seen in the variants of the adhesion molecule SSEA (SSEA-1 in mouse, SSEA-3 & 4 in humans).[16] Thus, while pluripotency research in mouse cells is valuable, a direct correlation to the human therapy is not likely.

Last, but certainly not least, a big difference between mouse and human stem cells are the moral and ethical dilemmas that accompany the research. Some people consider working with human embryonic stem cells to be ethically problematic while very few people have reservations on working with the mouse models. However, given the biological differences between human and mouse cells, most scientists believe that data relevant for human therapy will be missed by working only on rodents.

Multipotent

Cell surface markers are typically also used to identify multipotent stem cells. For example, mesenchymal stem cells can be purified from the whole bone marrow aspirate by eliminating cells that express markers of committed cell types, a step referred to as lineage negative enrichment, and then further separating the cells that express the sca-1 and c-Kit surface markers signifying mesenchymal stem cells. Both the lineage negative enrichment step and the sca-1/c-Kit isolation can be achieved by using flow cytometry and is discussed in further detail in the following review. The c-Kit surface marker also is used to distinguish the recently discovered cardiac stem

cells from the rest of the myocardium. A great deal of recent work in cardiovascular research has centered on trying to find which markers indicate early multipotent cells that will give rise to pre-cardiac myocytes. Cells with the specific mesodermal marker, Kdr, give rise to the progenitor cells of the cardiovascular system including contracting cardiac myocytes, endothelial cells and vascular smooth muscle cells and are therefore considered to be the earliest cells with specification towards the cardiovascular lineage. Cells at this early stage still proliferate readily and yet are destined to become cells of the cardiovascular system and so may be of great value therapeutically.

4.5 Stem cells therapy

Pluripotent stem cells

Pluripotent stem cells have not yet been used therapeutically in humans because many of the early animal studies resulted in the undesirable formation of unusual solid tumors, called teratomas. Teratomas are made of a mix of cell types from all the early germ layers. Later successful animal studies used pluripotent cells modified to a more mature phenotype which limits this proliferative capacity. Cells derived from pluripotent cells have been used to successfully treat animals. For example, animals with diabetes have been treated by the creation of insulin-producing cells responsive to glucose levels. Also, animals with acute spinal cord injury or visual impairment have been treated by creation of new myelinated neurons or retinal epithelial cells, respectively. Commercial companies are currently in negotiations with the FDA regarding the possibility of advancing to human trials. Other animal studies have been conducted to treat several maladies such as Parkinson’s disease, muscular dystrophy and heart failure.

Scientists hope that stem cell therapy can improve cardiac function by integration of newly formed beating cardiac myocytes into the myocardium to produce greater force. Patches of cardiac myocytes derived from human embryonic stem cells can form viable human myocardium after transplantation into animals, with some showing evidence of electrical integration. Damaged rodent hearts showed slightly improved cardiac function after injection of cardiac myocytes derived from human embryonic stem cells. The mechanisms for the gain in function are not fully understood but it may be only partially due to direct integration of new beating heart cells. It is more likely due to paracrine effects that benefit other existing heart cells (see next review).

Multipotent stem cells

Multipotent stem cells harvested from bone marrow have been used since the 1960’s to treat leukemia, myeloma and lymphoma. Since cells there give rise to lymphocytes, megakaryocytes and erythrocytes, the value of these cells is easily understood in treating blood cancers. Recently, some progress has been reported in the use of cells derived from bone marrow to treat other diseases. For example, the ability to form whole joints in mouse models has been achieved starting with mesenchymal stem cells that give rise to bone and cartilage. In the near future multipotent stem cells are likely to benefit many other diseases and clinical conditions. Bone marrow-derived stem cells are in clinical trials to remedy heart ailments. This is discussed in detail in the next review of this series.

Pluripotent vs. Multipotent

Pluripotent and multipotent stem cells have their respective advantages and disadvantages. The capacity of pluripotent cells to become any cell type is an obvious therapeutic advantage over their multipotent kin. Theoretically, they could be used to treat diseased or aging tissues in which multipotent stem cells are insufficient. Also, pluripotent stem cells proliferate more rapidly so can yield higher numbers of useful cells. However, use of donor pluripotent stem cells would require immune suppressive drugs for the duration of the graft while use of autologous multipotent stem cells (stem cells from ones' self) would not. This ability to use one's own cells is a great advantage of multipotent stem cells. The immune system recognizes specific surface proteins on cells/objects that tell them whether the cell is from the host and is healthy. Autologous, multipotent stem cells have the patient's specific surface proteins that allow it to be accepted by the host's immune system and avoid an immunological reaction. Pluripotent stem cells, on the other hand, are not from the host and therefore, lack the proper signals required to stave off rejection from the immune system. Research is ongoing trying to limit the immune response caused by pluripotent cells and is one possible advantage that iPS cells may have.

Adult stem cell

Adult Stem Cell can be divided by 3 kind of stem cell source:
Hematopoietic stem cells from Red blood cells, B lymphocytes, T lymphocytes, natural killer cells, neutrophils, basophils, eosinophils, monocytes, and macrophages.
Mesenchymal stem cells from Bone cells (osteoblasts and osteocytes), cartilage cells (chondrocytes), fat cells (adipocytes), and stromal cells that support blood formation.
Neural stem cells from Nerve cells (neurons) and non-neuronal cells—astrocytes and oligodendrocytes

Advantages of Adult Stem Cell

- Somewhat specialized – inducement maybe simpler
- **Not immunogenic** – recipients who receive the products of their own stem cells will not experience immune rejection
- Relative ease of procurement – some adult stem cells are **easy to harvest** (skin, muscle, marrow, fat)
- **Not tumorigenic** – tend not to form tumors
- **No harm** done to the donor

Previous reports have suggested that the beneficial effects of bone marrow-derived MSC-based therapy, such as angiogenesis, anti-inflammation, and antiapoptotic, are largely mediated by the trophic actions of cytokines and growth factors secreted by the bone marrow-derived MSCs rather than by the differentiation of MSCs into local tissue cell types. Similarly for ASCs, it has been shown that the beneficial impact on different organs/tissues within the human body may be due to soluble factors produced by ASCs rather than their differentiation capability toward different mature line- ages. The ASCs secretome has the potential to be a powerful tool for use in future approaches to develop cell-/tis- sue-based therapeutics for regenerative medicine. A number of papers have described the secretory profiles of preadipocytes, ASCs, or adipose tissue, which were determined using enzyme-linked immunosorbent assays

or related techniques. Analyses of the soluble factors released from human ASCs have revealed that cultured ASCs, at relatively early passages, secrete hepatocyte growth factor (HGF), vascular endothelial growth factor (VEGF), transforming growth factor-b, insulin-like growth factor (IGF)-1, basic fibroblast growth factor (bFGF), granulocyte-macrophage colony-stimulating factor, tumor necrosis factor (TNF)-a, interleukin-6, 7, 8, and 11, adiponectin, angiotensin, cathepsin D, pentraxin, pregnancy zone protein, retinol-binding protein, and CXCL12. The proliferation capacity of ASCs seems to be greater than that of bone marrow-derived MSCs. Previous reports have shown that the doubling times of ASCs during the logarithmic phase of growth range from 40 to 120 hours. are influenced by donor age, type (white or brown adipose tissue) and location (subcutaneous or visceral) of the adipose tissue, the harvesting procedure, culture conditions, plating density and media formulations [35, 56]. The younger the donor, the greater the proliferation and cell adhesion of the ASCs, while cells gradually lose their proliferative capacity with passaging. Based on b-galactosidase activity, senescence in ASCs is similar to that in bone marrow-derived MSCs.

ASCs are generally considered to be stable throughout long-term culture, as it was reported that even ASCs that had passed more than 100 population doublings had a normal dip- loid karyotype. On the other hand, one report suggests that human ASCs undergo malignant transformation when passaged for more than 4 months; although recent reports show that spontaneous transformation of MSCs may apparently be due to cross-contamination with malignant cell lines such as fibrosarcoma and osteosarcoma. Since the issue of spontaneous ASCs transformation is still controversial, further experiments and discussion are required

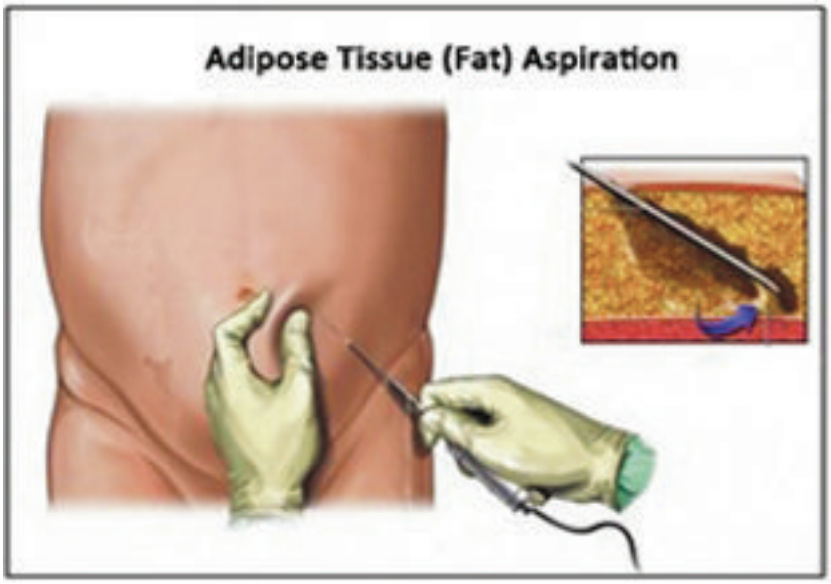
Adipose-derived stem cells (ASCs) are able to differentiate into multiple cell lineages, including endothelial, adipogenic, osteogenic, chondrogenic, and myogenic cell lines. This has previously been reported to be the result of a cellular milieu of various soluble factors produced by the ASCs themselves. This secretory profile of ASCs is regulated by exposure to different agents.

With the prominent role the cellular environment of ASCs plays, in vitro studies have focused on manipulating the culture medium of the ASCs in an effort to direct differentiation patterns in a lineage-specific pattern.

New Treatments Mesenchymal Stem Cell is Bone and cartilage repair, Heart and blood vessel repair, Inflammatory and Autoimmune diseases, Aesthetic and anti aging.

The benefit Adipose Stem Cell Therapy:

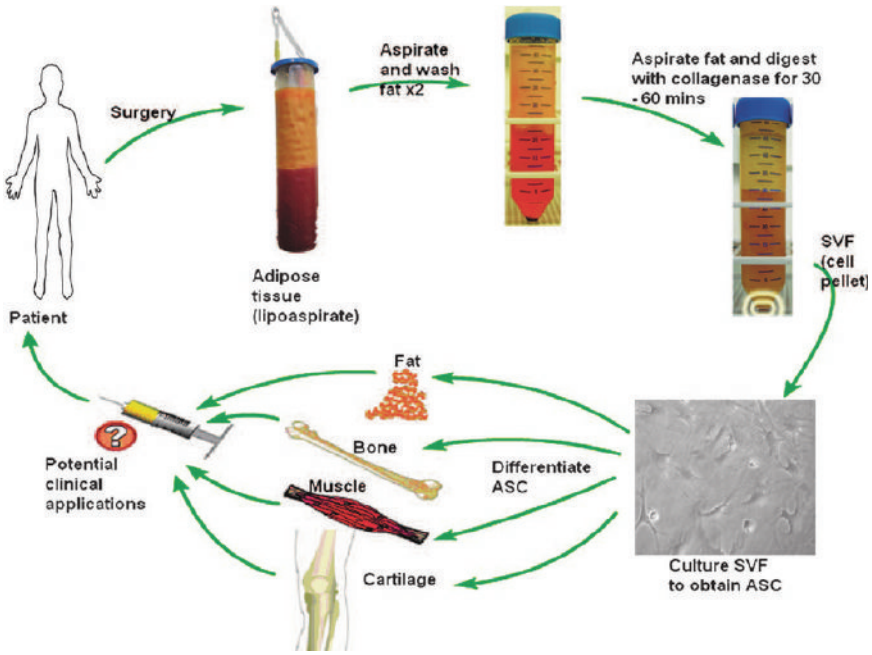
- **Autologous**
- Small sample of adipose tissue (fat) is removed from above the superior iliac spine or abdomen under a local anesthesia
- Much easier and less invasive than performing a bone marrow extraction
- Adipose tissue contains much larger volumes of mesenchymal stem cells than does bone marrow



Procedure Adipose Stem Cells Therapy

- ✧ Simple Blood test
- ✧ Tumor marker

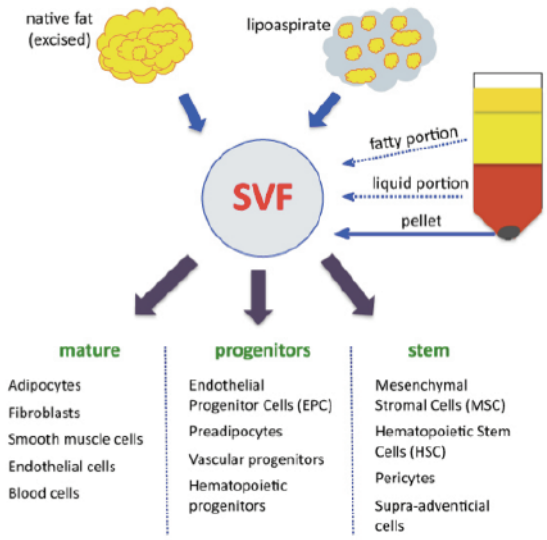
AFP, PSA, Ca199, HCG



Benefit of Autologous Fat Transfer With SVF

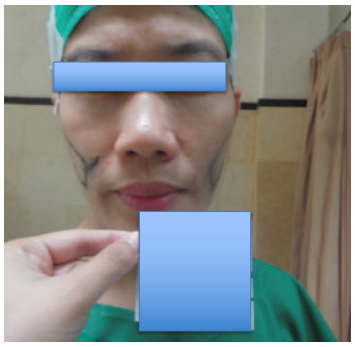
- Improved the survival of fat cells
- The adipose tissue is less absorbed
- Formation of greater numbers of new blood vessels
- Increased the fat graft viability
- The augmentation effect were superior then the conventional

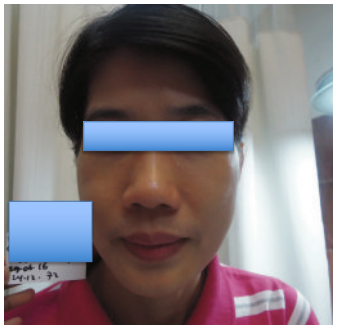
Stromal Vascular Fraction (SVF)



Fat transfer

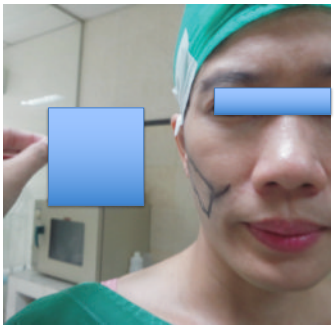
after



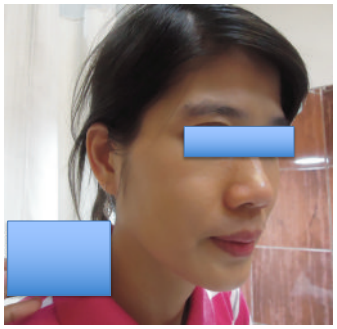


Fat transfer

Before

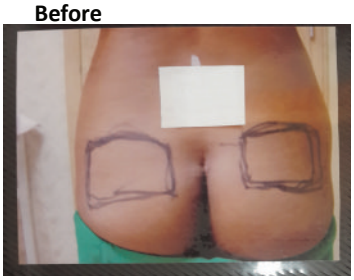


After

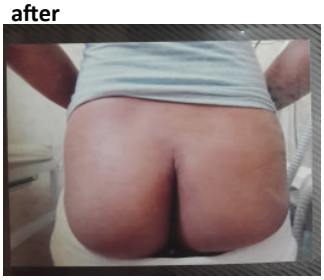


Fat transfer

Before



after

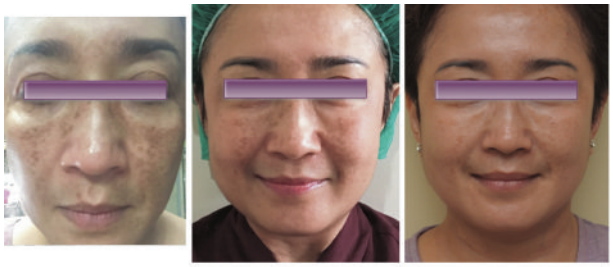


Fat Transfer

before

after

3x SVF + 2x PRP (2 Weeks Apart)



2 mo before treatment
6 mo after xenogeneic SC (sheep)

2 wk after 1st treatment

6 wk after 1st treatment

Courtesy of : Karina F. Moegni

3x SVF + 2x PRP (2 Weeks Apart)

Courtesy of :
Karina F.
Moegni

Conclusion: Stem cell can be used as anti aging therapy

Reference:

1. Yan Xu, Shilei Gou,Cui Wei, Honglan Li, Lei Chen, Chang Yin, Chuansen Zhang The Comparison of Adipose Steam Cell and in Facial Antiaging. Received 9 October 2015; Revised 15 December 2015; Accepted 10 January 2016
2. Won-Serk Kim, Byung-Soon Park · Jong-Hyuk Sun. Protective role of adipose-derived stem cells and their soluble factors in photoaging. Received: 25 October 2008 / Revised: 11 March 2009 / Accepted: 24 March 2009 / Accepted: 24 March 2009
3. Jae-Hong Kim, Minyoung Jung[1], Hyun-Soo Kim , Yong-Man Kim ,adipose derived stem cell as anew therapeutic modality for ageing skin
4. Zuk PA, Zhu M, Mizuno H et al. Multilineage cells from human adi- pose tissue: Implications for cell-based therapies. Tissue Eng 2001;7: 211–228.
5. Rodriguez AM, Elabd C, Delteil F et al. Adipocyte differentiation of multipotent cells established from human adipose tissue. Biochem Biophys Res Commun 2004;315:255–263.
6. De Ugarte DA, Morizono K, Elbarbary A et al. Comparison of multi-lineage cells from human adipose tissue and bone marrow. Cells Tissues Organs 2003;174:101–109.
7. Izadpanah R, Trygg C, Patel B et al. Biologic properties of mesen- chymal stem cells derived from bone marrow and adipose tissue. J Cell Biochem 2006;99:1285–1297.
8. Garcia S, Bernad A, Martin MC et al. Pitfalls in spontaneous in vitro transformation of human mesenchymal stem cells. Exp Cell Res 2010;316:1648–1650.
9. Torsvik A, Rosland GV, Svendsen A et al. Spontaneous malignant transformation of human mesenchymal stem cells reflects cross-con- tamination: Putting the research field on track—letter. Cancer Res 2010;70:6393–6396.

10. Wobus AM. Potential of embryonic stem cells. Mol Aspects Med. 2001;22:149–64.
11. Yamanaka S, Jinliang Li, Kania G, et al. Pluripotency of embryonic stem cells. Cell Tissue Res. 2008;331:5–22.
12. Yang L, Soonpaa MH, Adler ED, et al. Human cardiovascular progenitor cells develop from a KDR^{+} embryonic-stem-cell-derived population. Nature. 2008;453(7194):524–8.
13. Bajada S, Mazakova I, Richardson JB, Ashammakhi N. Updates on stem cells and their application in regenerative medicine. J Tissue Eng Regen Med. 2008;2(4):169–83.
14. Wernig M, Zhao JP, Pruszak J, et al. Neurons derived from reprogrammed fibroblasts functionally integrate into the fetal brain and improve symptoms of rats with parkinson's disease. Proc Natl Acad Sci USA. 2008;105(15):5856–61.
15. Darabi R, Gehlbach K, Bachoo RM, et al. Functional skeletal muscle regeneration from differentiating embryonic stem cells. NatMed. 2008;14(2):134–43.