DENTAL STEM CELLS-INVEST IN YOUR FUTURE

SWADEEPA R. BANALA, BDS, TELANGANA, INDIA

Dr. NTR University of Health Sciences

INTRODUCTION

Stem cells also known as "progenitor or precursor" cells are defined as clonogenic cells capable of both self renewal and multi-lineage differentiation. There are two primary sources of stem cells: Embryonic stem cells and adult stem cells. Adult stem cells derived from dental tissue are the Dental stem cells.

SOURCE OF DENTAL STEM CELLS

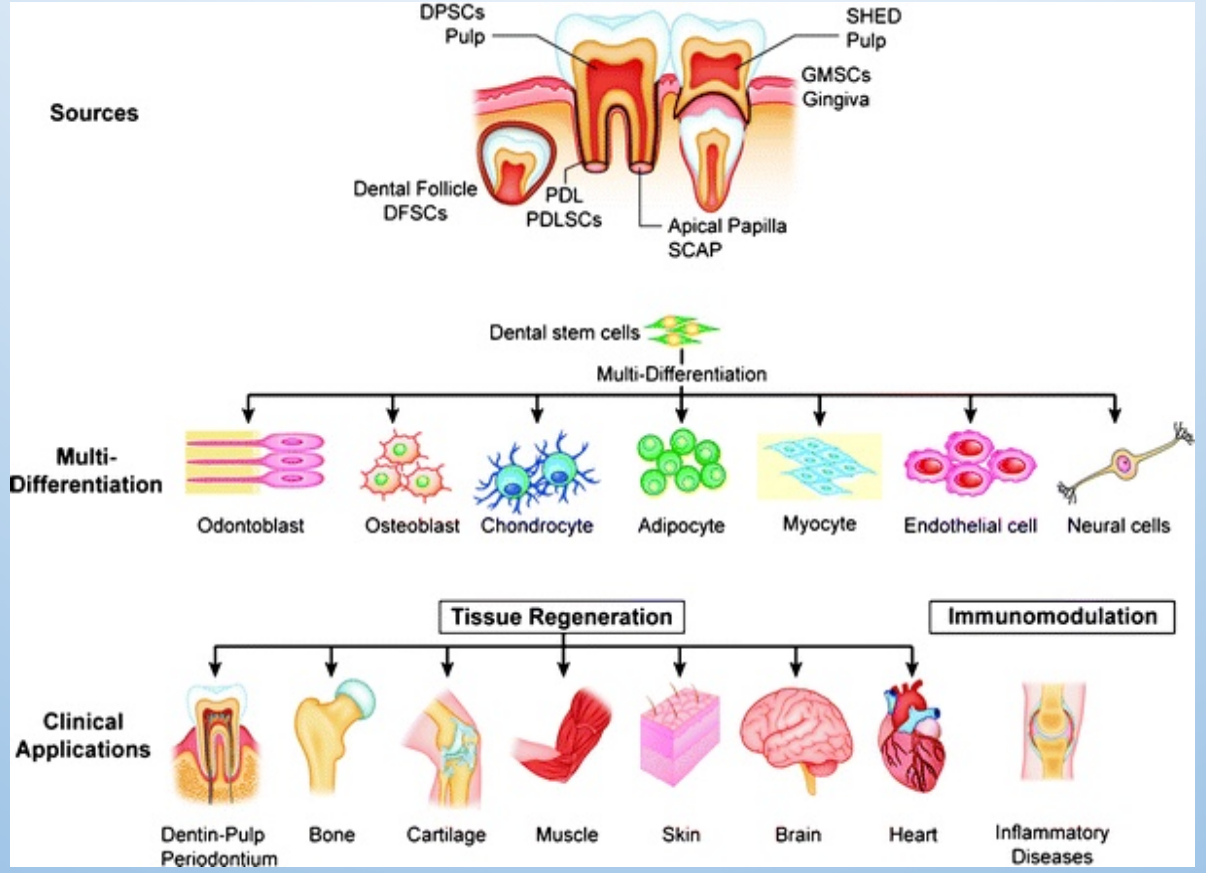
DENTAL PULP-	*Dental pulp stem cells*
PERIODONTAL LIGAMENT-	*Periodontal ligament stem cells*
EXFOLIATED DECIDUOUS TEETH-	*Stem cells from human exfoliated deciduous teeth*
APICAL PAPILLA-	*Stem cells from apical papilla*
DENTAL FOLLICLE-	*Dental follicle stem cells*

DENTAL APPLICATION

- *Pulpal regeneration*
- *Periodontal regeneration*
- *Dentofacial orthopedics*
- *Engineering of new teeth*

MEDICAL APPLICATION

- *Heart therapies*
- *Regenerating brain tissue*
- *Regeneration of bone and cartilage*
- *Adipose tissue*
- *Muscular dystrophy*



METHODS USED FOR STEM CELLS STORAGE

- *Cryopreservation*
- *Magnetic freezing*

CONCLUSION

The oral and maxillofacial regions have been described as promising source of adult stem cells. Dental tissue engineering is a new promising therapeutic approach that aims at restoring the damaged dental tissue with the use dental stem cells.

REFERENCE

- Yao S, Pan F, PRIC V, Wise GE. Differentiation of stem cells in the dental follicle. J Dent Res. 2008
- E Ikeda and T. Tsuji, "Growing bioengineered teeth from single cells: potential for regenerative medicine "2008
- d' Aquino R, De Rosa A, Lanza V, et al. Human mandible bone defect repair by grafting of dental pulp cells . 2009
- Journal of Natural Science , Biology and Medicine. 2015