To heal or not to heal? Chemokines as determinants of constructive or destructive inflammatory microenvironments

Dear Readers,

Dental pulp stem cells gained attention as a subpopulation of postnatal stem cells with the ability of multipotential differentiation. Therefore, these cells, specifically SHED (stem cells from human exfoliated deciduous teeth), have been extensively investigated as a potential cellular source to clinical regenerative intervention.

Despite the buzz generated by the potential 'external' tissue engineering (and tooth-engineering) application of dental pulp stem cells, its 'intrinsic' role in dental pulp and tissue engineering (and tooth-engineering) application of dental pulp stem cells has not generally observed in chronically inflamed pulpal and periapical tissues, it is still possible to consider that MSCs play an active role in determining lesions activity or stability, in the view of the potent immunosuppressive properties presented by these cells.

Therefore, the study presented by Sipert et al. (2013) not only describes the production of the chemokines CXCL12 and CCL3 by pulp cells, but also reinforce the importance of the simultaneous analysis of factors that can lead to constructive and destructive inflammation. Individual analysis of isolated factors may drive biased conclusions, and a broad and simultaneous analysis of distinct classes of mediators seems to be a rational way to elucidate the global immunoregulatory network that determines pulpal and periapical inflammation outcome.

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References