

Biologics and Delaying the Effects of Ageing: Applications in Dentistry

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ABSTRACT

The future of medical treatment will involve the use of biologics for tissue enhancement, limb salvage, and the reversal of disease processes. However, there is currently a battle in literature and clinical practice where proponents of regeneration, biologics, stem cells, adjuvants, and synthetic substitutes are facing an uphill battle against other established treatments. We understand the forefront of organ salvage is in dentistry. The principles here are well established and accepted and, in this presentation, we categorize currently available biologics as well as their use cases. In particular, the osteogenic and osteointegrative nature of bone grafts which work conductively and inductively based on their characteristics and application. Additionally, the basis of chronic and life ending disease is ageing. We hypothesize all chronic disease could be the result of cell senility and propose the first step in delaying the effects of ageing will be in regeneration of single cell types with eventual extrapolation to the delay of the ageing process. Principles used in cellular regeneration will be the same principles used for the prevention or delay of ageing. The importance of cell signaling, amount, frequency, and duration of treatment for the reversal of degenerative and post traumatic disease will be discussed with particular connection to dentistry. Is senility a function of cell signaling or fatigue? And is it reversible, delayable, or preventable? We will assert that there is no silver bullet to reverse ageing but there is a clear need for multiple adjuvants and promoters to act together to improve cell health and reverse the ageing process.

Keywords: Biologics, Organ salvage, Ageing, Bone graft, Regenerative medicine

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