Regenerative Medicine for Dentistry—“Times are A-Changin’”

Regenerative medicine for dentistry represents a new day and paradigm for oral implantology. This evolving interdisciplinary field in healthcare has begun, and will continue to improve the way in which we treat patients. Many patients perceive regenerative dentistry as something of the future, but it is actually available here and now. Implant Dentists are already utilizing regenerative techniques to improve the predictability of surgical procedures.

Regenerative dentistry includes the use of biologics. One example biologic is autogenous platelet concentrates. Platelet technology was introduced in the 1990s and has continued to evolve. The use of platelet concentrates has encountered several controversies that include: (i) Does it work? (ii) Does it only influence soft tissue healing? (iii) Is there a benefit to bone healing? (iv) Which manufacturer has the “best” technology? 

There is one fact that we can all agree upon: the autogenous growth factors contained within the alpha granules of the platelets trigger some type of beneficial effect within the surgical site. It has been well characterized that these growth factors convey signals to their target cells through receptor binding, which results in activation of specific target genes. 

From that point forward, things are not as clear.

Recombinant human growth factors (rhGFs) have also been faced with their share of questions. Issues for rhGFs include: (i) Are they safe? (ii) What is the correct dose? (iii) How should they be delivered? (iv) How do clinicians justify rhGFs cost to patients?

Schliephake et al concluded: “Evidence of clinical efficacy of growth factors in reconstructive procedures in the oral and maxillofacial area is limited.” However, Al-Hezaimi et al, found that rhPDGF-BB formulation as the implant surface treatment may accelerate the process of osseointegration and enhance bone-to-implant contact. Hence the confusion continues.

Bone marrow stem cell concentration techniques are being developed for routine clinical use. It has been recognized that combining growth factors with stem cells creates the potential to improve the biomimetic properties and regenerative potential of scaffold-based delivery platforms. These tissue engineering techniques will require appropriately trained surgical and laboratory teams to assure their safe and effective use.

Recognizing the importance of the regenerative medicine/dentistry topic and appreciating the controversy surrounding these topics, Journal of Oral Implantology (JOI) will be introducing a new table of contents section titled, “Regenerative Medicine for Dentistry” that will include clinical and research papers relevant to this topic. JOI has published regenerative articles in the past; however, they were presented within the existing table of contents. The Editorial team feels that the time has come for regenerative medicine for dentistry to have its own proprietary section. Hopefully, this change will help readers stay current with this rapidly developing topic as it relates to our daily practices.

In order to support the new section, JOI is placing a formal “Call for Papers” for both clinical- and research-oriented regenerative medicine for dentistry manuscripts. Please see the formal “Call for Papers” notice elsewhere in this issue of JOI. All manuscripts should be submitted through the JOI peer review website (http://www.editorialmanager.com/aid-joii/), which includes publication requirements.

Many of us are old enough to appreciate and remember the lyrics “you better start swimmin’ or you’ll sink like a stone, for the times they are a-changin’” from the 1964 Bob Dylan song titled, “The Times Are A-Changin”.” JOI will help the readers swim through the dynamic and exciting times we currently find ourselves in.

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REFERENCES