Surrogate therapy and electrospun recuperation- The new anticipation

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Commentary:

The oral cavity is an intricate environment wherein a rich and differing microbial community is existing. Literature has proven Streptococcus mutans as the important causative operator for the initiation of dental caries, which might be principally due to its adherence capacity to the tooth surface and acid production. Despite utilizing the traditional approaches, newer approaches for the prevention against dental caries or managing the lost dental tissues if it has already occurred, are highly desirable to reinforce the existing ones.

A deliberately built effector strain is utilized in replacement therapy that gives various points of interest over regular counteraction procedures and oral immunizations. A solitary colonization routine that prompts relentless colonization by the effector strain ought to give deep-rooted security against dental caries. On the occasion that the effector strain doesn’t persevere inconclusively in certain concerns, this strain can be reapplied as the need emerges with no critical included worry for security or viability.

Untreated caries can progress to pulp necrosis which eventually may lead to periodontal destruction. Regenerative endodontics recuperates the complex dentin-pulpal histology. Over the years, there is a tremendous increase in the field of biomaterials and tissue engineering in which electrospun nanofibers fabricated through electrospinning, have gained great attention because of its structure and properties. Nanofibers can shape an exceptionally permeable work and their huge surface-to-volume proportion improves execution for some applications. Electrospinning has the exceptional capacity to create nanofibers of various materials in different stringy gatherings. The comparatively high creation rate and straightforwardness of the arrangement make electrospinning profoundly alluring to both the scholarly community and industry. An assortment of nanofibers can be made for applications in energy stockpiling, medical care, biotechnology, natural designing, and protection and security.

Electrospinning is one of the procedures to deliver organized nanoscale polymeric strands to produce novel materials for the regenerative procedure. Recently, electrospun nanofibers have contributed to highly promotive cell homing behaviors, resulting in expected improved dental regeneration.

Practically any dissolvable polymer with adequately high atomic weight can be electrospun. Nanofibers constructed of characteristic polymers, polymer coalesces, drug-impregnated polymers and porcelain antecedents have been effectively illustrated. Diverse fiber chassis including beaded, strip, permeable, and center shell filaments have likewise appeared.

With late advancements in electrospinning, both manufactured and regular polymers can be delivered as nanofibers with widths going till 100 nm having subdued morphology and capacity. The capability of these electrospun nanofibers in human medical care applications is promising, for instance in the healing of tissue and revascularization, as mediators to convey medications, therapeutic vectors, as biocompatible embed gadgets, as clinical diagnostic aids and instrumentation, as defensive textures against natural and irresistible operators in clinics and general environmental factors, and in restorative and dental applications.

The utilization of electrospun strands is limited and still in the developing phase in oral regions, fundamentally because of the novelty of the method.

The idea of this poster is to catch attention towards the replacement therapy to stop the caries occurrence or if it’s not, then rejuvenation through advanced regeneration techniques such as electrospun nanofibers.
References

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