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Pioneering Position of Iranian Scientists on Vital Pulp Therapy

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Dear Editor,

Nowadays, we are living in an exceptionally different period of time, *the Information Explosion Era*, where fast production of data can be clearly observed. Each and every day, experts, investigators, clinicians, and practitioners encounter massive amounts of research and studies, leading to new products/materials/strategies/techniques for use in routine and common practice; although in many instances, there is no attached scientific report/document to demonstrate supporting evidence.

American Association of Endodontists (AAE), as a leading scientific association in the world of endodontics, is committed to clinical excellence for the highest standard of patient care, officially leads endodontists toward evidence-based practice and guides them to follow professional improvement via education, exploration, advocacy, leadership, communication and service. AAE has recently developed and released a new position statement on vital pulp therapy (VPT) [1] based on the voluminous amount of recent research. The main objective of the statement is to add VPT in routine clinical practice so as to preserve the vitality and function of the dental pulp as an effective replacement for pulpectomy or tooth extraction. The association has clearly stated that although the only treatment options for mature teeth with injured pulps and/or fully-formed roots used to be root canal therapy (RCT) or extraction, VPT is/will be deliberated as an accepted treatment modality for the aforementioned teeth, specifically for the ones with pretreatment diagnosis of *irreversible pulpitis*.

In this position statement, there are 96 references, of which 8 references [2-9] belong to Iranian scientists and researchers who have led and provided numerous clinical studies on VPT, including, but not limited to, the first multicenter randomized clinical trial in the world in order to demonstrate VPT as a valuable treatment modality for the management of teeth with the clinical diagnosis of irreversible pulpitis. Historically, there were two case series on the successful clinical outcomes of pulpotomy in irreversible pulpitis cases in 2009 [10, 11]. The first related randomized clinical trial showing the efficacy of VPT in comparison to RCT was published in 2010 [12]. Furthermore, there is a great number of clinical studies with different levels of evidence, *i.e.* case reports, case series and randomized clinical trials, demonstrating favorable outcomes of different VPT techniques in the management of exposed human dental pulps conducted by the researchers of our university [13-31] proving the leadership of Iranian researchers in this cutting-edge field of science. Additionally, a recent scientometric analysis on VPT studies in 2021 has clearly ranked three Iranian researchers in the first leading 10 authors who have immensely contributed to the research on VPT with 1st, 3rd and 9th positions [32]. Besides, the concept of VPT has recently entered endodontic textbooks, *e.g.* "Ingle's Endodontics" and "Cohen's Pathways of the pulp", where in chapter 24 of the latter, the Iranian first leading author contributing to the research on VPT has been cited more than any other scientists.

It has been strongly recommended that practicing clinicians should focus on regenerative concepts, *e.g.* VPT, as unique substitutions for replacement therapies more than any other eras in the history of medical and dental sciences [33, 34]. Additionally, in endodontics, the impressive regenerative potential of human dental pulp stem cells [35] makes VPT highly successful, when the appropriate modality of the state-of-the-art biotechnology is properly employed [2]. In addition, considering socio-economic implications on oral health status and oral health-related quality of life, a health technology assessment has revealed that VPT is feasible and acceptable comparable to RCT, but with more success, accessibility, affordability, availability and safety [36].

Last but not least, today's world is faced with various pandemic outbreaks of COVID-19 and consequently, dental practice is at a high risk of transmitting the disease [37]. Patients with dental pain, specifically when there is symptomatic irreversible pulpitis, need an approved definite treatment with excellent pain relief, a high success rate and a possible shorter course of treatment [38, 39]. VPT can present the aforesaid objectives altogether, making it a valuable opportunity for worldwide nations.

Taking the above into consideration as well as enormous studies undertaken on VPT over the last two decades, Iran and Iranian researchers have acted as scientific hegemony for the establishment and popularization of VPT, not only nationwide but on a much larger global scale.

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