

## Risk assessment of apical periodontitis in endodontically treated teeth: a cross-sectional study

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### Abstract

Apical periodontitis represents inflammation and destruction of the periradicular tissues occurring in response to the presence of microorganisms and their irritants within the root canal system. The ultimate goal of endodontic treatment is then to eliminate or at least reduce the microbial load within the root canal system. Even though, apical periodontitis may persist following root canal treatment. The present study aimed at investigating risk factors associated to apical periodontitis in endodontically treated teeth.

**Methods:** A total of 358 endodontically treated teeth were evaluated after a 1-year period in a Moroccan population according to predetermined criteria. Studied parameters were assessed clinically and radiographically. The association between coronal restoration quality, cavity design, periodontal status, root canal filling quality, coronal restoration related features, presence or absence of the opposing dentition and the periapical status was determined. Data were analyzed using chi-square test, odds ratio and logistic regression.

**Results:** The present study revealed that gingival health, coronal restoration with CL II cavity design, and root canal filling quality influenced periapical status of endodontically treated teeth. This association was statistically significant for gingival disease (95% IC: 1.08-3.91, OR: 2.05,  $p=0.02$ ), inadequate coronal restoration (95%IC: 1.16-4.04, OR: 2.16,  $p: 0.01$ ), and inadequate root canal filling (95%IC: 4.86-27.99, OR: 11.6,  $P<0.001$ ) respectively. Prevalence of apical periodontitis in the studied endodontically treated teeth was 72.1%.

**Conclusions:** The present study revealed that inadequate coronal restorations especially with large proximal margins (CL II cavity design) and gingival disease increased the risk of AP in endodontically treated teeth. Under filled or over filled root canals, canal fillings with low density and inadequate conicity were more associated with AP than inadequate coronal restorations, and when the root canal filling was inadequate the coronal seal did not prevent AP in endodontically treated teeth.



### Biography:

EL OUARTI IMANE has completed her PhD. Present she is working in Department of Endodontics and Restorative Dentistry, Faculty of Dentistry, Mohammed V University Rabat, Morocco.

### Speaker Publications:

1."Conceptual Architecture of AI-Enabled IoT System for Knee Rehabilitation Exercises Telemonitoring", International Conference on Artificial Intelligence & Industrial Applications 19 July 2020

2." The food plant *Silybum marianum* (L.) Gaertn.: Phytochemistry, Ethnopharmacology and Clinical Evidence", Journal of Ethnopharmacology/ Volume 265, 30 January 2021, 113303

[25th International Conference on Dental Education](#) July 20-21, 2020 Webinar

### Abstract Citation:

EL OUARTI IMANE, Risk assessment of apical periodontitis in endodontically treated teeth: a cross-sectional study, Dental Education 2020, 25th International Conference on Dental Education, July 20-21, 2020 Webinar

<https://dentaleducation.dentalcongress.com/abstract/2020/Risk-assessment-of-apical-periodontitis-in-endodontically-treated-teeth-a-cross-sectional-study>