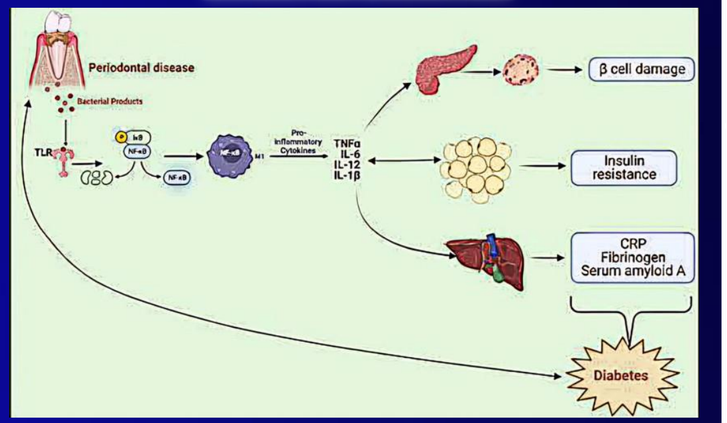
39th IACDE National Conference

# ASSOCIATION BETWEEN SYSTEMIC DISEASE AND OTHER FACTORS ON THE OUTCOME OF ENDODONTIC TREATMENT: A SYSTEMATIC REVIEW

## METHODOLOGY

| 107 RECORDS (SCREENING) | 77 RECORDS (did not meet INCLUSION CRITERIA) | 34 RECORDS (ELIGIBLE) | 19 RECORDS (QUALITATIVE SYNTHESIS) |
|---|---|---|---|

## DIABETES MELLITUS




- Hinders the immune response
- Exacerbating periapical inflammation
- Hindering bone turnover
- Impeding wound healing

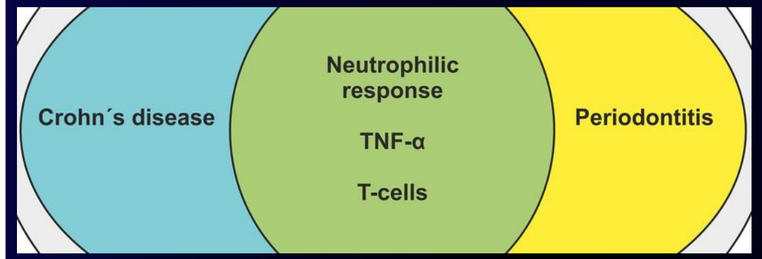
**Increase of RCT setback and an elevated frequency of preserving long term Apical Periodontitis**

## CARDIOVASCULAR DISEASE(CVD)

- **Both CVD and endodontic infections share similar inflammatory mediators in the initiation and progression of the disease process.**
- **A systematic review found that patients with CVD had a 67% higher risk of negative endodontic outcomes.**
- **A simultaneous presence of two or more diseases among DM, HT, and CVD was linked to an increased long-term hazard of tooth removal after conservative endodontic therapy.**

## INFLAMMATORY BOWEL DISEASE

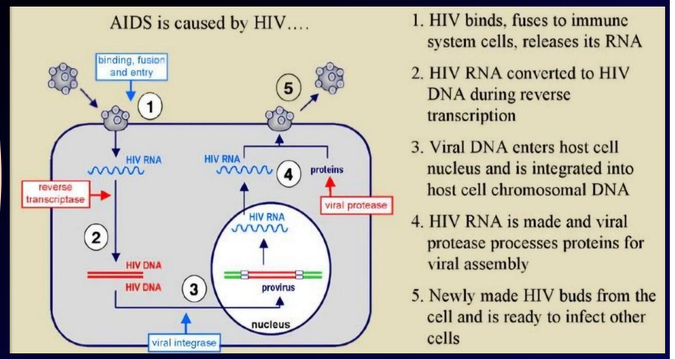
The prevelance of RCTs and IBD is approximately **54%** and is caused due to :-




- **GENETICS**
- **MEDICATION**
- **INFLAMMASOME ACTIVATION**

## HUMAN IMMUNO DEFICIENCY VIRUS (HIV)

**Endodontic therapy is not contra-indicated HIV+ve patients, although treatment times may be longer, and time to full resolution may take longer in some of these patients.**




1. HIV binds, fuses to immune system cells, releases its RNA
2. HIV RNA converted to HIV DNA during reverse transcription
3. Viral DNA enters host cell nucleus and is integrated into host cell chromosomal DNA
4. HIV RNA is made and viral protease processes proteins for viral assembly
5. Newly made HIV buds from the cell and is ready to infect other cells

**Comparison of the outcomes of endodontic therapy between HIV+ve and HIV-ve patients over 24-months, with respect to single teeth endodontic procedures.**

| | 12 months | | 18 months | | 24 months | | Total no. of patients |
|---|---|---|---|---|---|---|---|
| | Success | Failure | Success | Failure | Success | Failure | |
| HIV + | 33 | 13 | 35 | 11 | 39 | 7 | 46 |
| HIV - | 3 | 56 | 57 | 2 | 57 | 2 | 59 |

**There was no significant difference in the final outcome at 24 months, though resolution of signs and symptoms tended to occur earlier in the HIV-ve patients.**

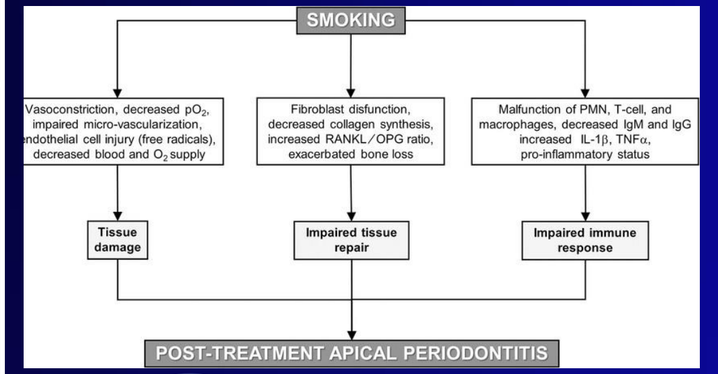
## SMOKING

- **DELAYED HEALING**
- **INCR INFLAMMATION**
- **DRY SOCKET**
- **IRRITATED MOUTH**

**REDUCED EFFECTIVENESS OF MEDICATION**

**DID YOU KNOW ?**

**Smokers are nearly TWICE as likely to need a root canal as compared to non-smokers**




**CAN YOU SMOKE AFTER RCT?**

**Smokers may experience greater periapical bone destruction, and altered periapical repair after endodonitc treatment, potentially leading to an intensified in the quanity and/or size of lesion around the apex.**

## REFERENCES


- Laukkanen E, Vehkalahti MM, Kotiranta AK. Impact of systemic diseases and tooth-based factors on outcome of root canal treatment. Int Endod J 2019;52(10):1417-1426
- Segura-Egea JJ, Martin-Gonzalez J, Cabanillas-Balsera D, Fouad AF, Velasco-Ortega E, Lopez-Lopez J. Association between diabetes and the prevalence of radiolucent periapical lesions in root-filled teeth: systematic review and meta-analysis. Endodoncia 2013;31:81-90
- Mindiola MJ, Mickel AK, Sami C, Jones JJ, Lalumandier JA, Nelson SS. Endodontic treatment in an American Indian population: a 10-year retrospective study. J Endod 2006;32:828-32.
- Ng YL, Mann V, Gulabivala K. A prospective study of the factors affecting outcomes of non-surgical root canal treatment: part 2: tooth survival. Int Endod J 2011;44:610-25.
- Wang CH, Chueh LH, Chen SC, Feng YC, Hsiao CK, Chiang CP. Impact of diabetes mellitus, hypertension, and coronary artery disease on tooth extraction after nonsurgical endodontic treatment. J Endod 2011;37:1-5.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