The Effect of Rubber Dam Usage on the Survival Rate of Teeth Receiving Initial Root Canal Treatment: A Nationwide Population-based Study

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**Aim**
- To investigate whether rubber dam usage affects the survival rate of initial RCT.

**Materials & Methods**
- 517,234 teeth that received initial RCT between 2005 and 2011 were included in this study.
- Rubber dam usage was identified by a specific treatment code during each endodontic session and confirmed by clinical or radiographic evidence (x rays with clamps or photographs).
- Statistical analysis was used to estimate the effects of rubber dam usage on the risk of tooth extraction after initial RCT.
- Several systemic diseases associated with tooth extraction (DM, hypertension, CHD and hyperlipidemia) were included in the analytic model to ensure the accuracy of the data.

**Results**
- The survival rate of teeth was 94.4% with a mean observation time of 3.4 yrs.
- The survival rate of the teeth that received RCT with a rubber dam (95.15%) was significantly higher than the teeth that received RCT without a rubber dam (94.2%)
- The survival probability of RCT that used rubber dams (90.3%) was significantly higher than teeth that received RCT without a rubber dam (88.8%)
- Multivariate regression analyses indicated that the effect of rubber dam usage results in a significantly higher survival rate after initial RCT.

**Conclusion**
- The use of a rubber dam during RCT could provide a significantly higher survival rate after initial RCT.
- This result supports that rubber dam usage improves the outcomes of endodontic treatments.

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