

Evaluasi efek frekuensi preparasi dan sterilisasi terhadap perubahan morfologi file endodontik ni-ti hand-use = Preparation and sterilization frequency effect on ni-ti endodontic file morphological changes.

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Abstrak

Latar Belakang: Preparasi saluran akar gigi dengan file endodontik Ni-Ti umum digunakan saat ini dalam praktik klinis maupun institusi pendidikan karena karakteristik bahan yang baik. File perlu melalui sterilisasi autoklaf sebelum digunakan kembali. Namun, setelah siklus preparasi dan sterilisasi terlihat perubahan morfologi dan belum ada kesepakatan batas penggunaan untuk menghindari hal tersebut.

Tujuan: Menganalisis efek frekuensi preparasi dan sterilisasi terhadap perubahan morfologi file endodontik Ni-Ti hand-use.

Metode: File ProTaper® Universal hand-use (Dentsply Maillefer) digunakan untuk preparasi 135 gigi premolar akar tunggal, sebanyak 5 kali (kelompok 1) dan 10 kali (kelompok 2), antar tiap preparasi file dibersihkan dengan larutan enzimatik, scouring sponge, ultrasonic cleaner dan sterilisasi autoklaf. Kemudian sampel diamati dengan stereomicroscope (Nikon® SMZ800, Japan). Data dianalisis dengan uji Kruskal-wallis dan Mann-Whitney ($p < 0,05$).

Hasil Penelitian: Terdapat perbedaan bermakna antara perubahan morfologi file setelah 5 dan 10 kali preparasi dan sterilisasi ($p < 0,05$). Tidak terdapat perbedaan bermakna antara perubahan morfologi file F1 setelah 5 dan 10 siklus ($p > 0,05$). Terdapat perbedaan bermakna antara perubahan morfologi file F2 setelah 5 dan 10 siklus ($p < 0,05$) dan antara perubahan morfologi file F1 dan F2 setelah 5 siklus ($p < 0,05$). Tidak terdapat perbedaan bermakna antara perubahan morfologi file F1 dan F2 melalui 10 siklus ($p > 0,05$).

Kesimpulan: Frekuensi preparasi dan sterilisasi file endodontik Ni-Ti hand use memiliki efek terhadap perubahan morfologi pada file.

.....Background: Root canal preparation using Ni-Ti endodontic file was generally used today, due to its more elastic characteristic. In clinical setting, file requires autoclave sterilization before next usage.

However, morphological changes could be seen after cycles of preparation and sterilization and there is still no agreement on safe usage limits for the re-use of these files.

Objective: To analyze the effect of preparation and sterilization frequency on Ni-Ti endodontic hand-use files by their morphological changes.

Method: ProTaper® Universal Hand-use files (PTU) (Dentsply Maillefer, Switzerland) were used on 135 single-rooted canal premolars for 5 times (1st group), 10 times (2nd group), then after every use, files are cleaned with enzymatic solution, scouring sponge, ultrasonic cleaner and sterilized by autoclave. Afterward, F1 and F2 files observed with stereomicroscope. Data was analyzed using Kruskal-Wallis and Mann-

Whitney tests ($p < 0.05$).

Result: There were statistically significant differences of file morphological changes after 5 and 10 cycles ($p < 0.05$). There were no statistically significant differences of F1 files morphological changes after 5 and 10 cycles ($p > 0.05$). There were statistically significant differences of F2 files morphological changes after 5 and 10 cycles ($p < 0.05$). There were statistically significant differences of F1 and F2 files morphological changes after 5 cycles ($p < 0.05$). There were no statistically significant differences of F1 and F2 files morphological changes after 10 cycle ($p > 0.05$).

Conclusion: The frequency of preparation and sterilization on Ni-Ti endodontic hand-use files had effect on its morphological changes.