Flare-up in Endodontics: Relation to the Number of Sessions
Narrative Review

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Introduction Endodontic Flare-up is defined as moderate to severe postoperative pain and/or severe swelling, beginning 12 to 48 hours after treatment, and lasting for, at least, 48 hours.

Aim Evaluate which of the approaches, single session or multiple session, presents lower probability of appearance of Flare-up.

Materials and Methods The literature search was based on the b-On search engines, National Library of Medicine, PubMed Database, using, in different combinations, the terms: "flare-up", "endodontics", "postoperative pain" and "number of sessions", with the time limit between 2010 and 2019. Meta-analyzes, bibliographic reviews and randomized controlled trials were included. Excluded were articles whose purpose deviated from the main theme and those whose methodology of research was incomplete.

Results Seventeen articles were selected, 6 of which are systematic or bibliographical reviews (table 1) and 11 are clinical studies (table 2), according to defined inclusion criteria. Among the review articles, we found 1 that points to a positive association between increased incidence of Flare-up and Non-Surgical Root Canal Treatment (NSRCT) performed in single sessions (SS). From the clinical studies analyzed, 4 indicated an association between the occurrence of Flare-up and the performance of NSRCT in multiple sessions (MS). Most review articles or clinical studies indicate that there is no statistically significant association between these two variables.

Table 1 – Systematic or bibliographic reviews

Authors, Year	Type of Article	Aim	Higher Incidence in SS	Higher incidence MS	No significant association
Al-Rahabi e Abdulkhayum (2012)	Bibliographic review	- Evaluate NSRCT efficiency and reliability in a single session			✓
Sipavičiūtė e Manelienė (2014)	Bibliographic review	- Report and discuss the frequency and factors associated with flare-up	✓		
Brignardello-Petersen (2017)	Systemactic review	- Compare short and long-term effects of single sessions and multiple sessions			✓
Schwendicke e Göstemeyer (2017)	Systematic review	- Assess the risk of complications after single or multiple sessions			✓
Al-Razhi, Fadag e Alqutaibi (2018)	Systematic review and meta-analysis	- Measure long-term complications, postoperative pain and flare-up			✓
Dennis (2018)	Systematic review and meta-analysis	- Evaluate the success rate between single and multiple sessions			✓

Table 2 – Clinical studies

Authors, Year	Aim	Higher incidence in SS	Higher incidence in MS	No significant association
Alves (2010)	- Assess the incidence of flare-up and identify associated factors			✓
Christopher e Emmanuel (2010)	- Determine the incidence of flare-up and impact of other effects			✓
ElMubarak, Abu-bakr e Ibrahim (2010)	- Assess post-NSRCT pain			✓
Al-Sharif (2011)	- Compare the rate of flare-up in molars treated in single sessions or multiple sessions		✓	
Paredes-Vieyra e Enriquez (2012)	- Evaluate the result of NSRCT performed in single sessions or multiple sessions on teeth with apical periodontitis after 2-year follow-up		✓	
Akbar, Iqbal e Al-Omiri (2013)	- Compare the incidence of post-obturation flare-up in single or multiple sessions in molars with apical lesion			✓
Pamboo et al. (2014)	- Evaluate the incidence of flare-up and its relation with preoperative and intraoperative variables			✓
Onay, Ungor e Canan Yazici (2015)	- Assess the incidence of flare-up and identify risk factors		✓	
Alklayb et al. (2017)	- Evaluate the incidence rate of flare-up and identify association with risk factors			✓
Sevekar e Gowda (2017)	- Compare incidence and intensity of flare-up after pulpectomy in single and multiple sessions			✓
Hepsenoglu, Eyubogl e Ozcan (2018)	- Evaluate postoperative pain in a single session or in two sessions with two different intracanal medications		✓	

Conclusions According to the literature reviewed, the number of sessions chosen to address the Non-Surgical Root Canal Treatment is not a predisposing or precipitating factor of the occurrence of Flare-up. Nevertheless, the literature on the subject is still scarce and presents some defects. Further studies are needed to unambiguously establish the association or not with the number of NSRCT sessions.

Clinical Implications Knowledge of the factors that may be associated with the development of Flare-up assists the Dentist in the selection of the best approach to treatment, knowing that the number of sessions does not appear to be a prominent variable as long as the antimicrobial efficacy of the treatment is ensured.

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