

## Supplementary Materials

**Table S1.** Articles discarded after having read full articles, with reasons.

| Study   | Reason for Exclusion   |
|---|--|
| Adde CA, Soares MS, Romano MM, Carnaval TG, Sampaio RM, Aldarvis FP, Federico LR. Clinical and surgical evaluation of the indication of postoperative antibiotic prescription in third molar surgery. <i>Oral Surg Oral Med Oral Pathol Oral Radiol.</i> 2012 Nov; 114 (5 Suppl): S26–31.   | The data relating to the maxillary and mandibular third molars are combined, without the possibility of extrapolating results on the mandibular third molars only. |
| Ataoglu H, Oz GY, Candirli C, Kiziloğlu D. Routine antibiotic prophylaxis is not necessary during operations to remove third molars. <i>Br J Oral Maxillofac Surg.</i> 2008 Mar; 46(2): 133–5.  | The data relating to the maxillary and mandibular third molars are combined, without the possibility of extrapolating results on the mandibular third molars only. |
| Barasch A, Safford MM, Litaker MS, Gilbert GH. Risk factors for oral postoperative infection in patients with diabetes. <i>Spec Care Dentist.</i> 2008 Jul–Aug; 28(4): 159–66.  | Systematic review on a diabetic population.  |
| Bascones-Martinez A, Reche I, Manso F, González-Moles MA, Bravo M. Prevention of alveolar osteitis with azithromycin in women according to use of tobacco and oral contraceptives. <i>Quintessence Int.</i> 2007 Apr; 38(4): 295–300.   | Also upper third molars are extracted and the study considers a population of smokers and women taking birth control pill.   |
| Bergdahl M, Hedström L. Metronidazole for the prevention of dry socket after removal of partially impacted mandibular third molar: a randomised controlled trial. <i>Br J Oral Maxillofac Surg.</i> 2004 Dec; 42(6): 555–558.   | The RCT, however very well done, only evaluates the onset of dry sockets and not signs of infection.   |
| Bezerra TP, Studart-Soares EC, Scaparo HC, Pita-Neto IC, Batista SH, Fonteles CS. Prophylaxis versus placebo treatment for infective and inflammatory complications of surgical third molar removal: a split-mouth, double-blind, controlled, clinical trial with amoxicillin (500 mg). <i>J Oral Maxillofac Surg.</i> 2011 Nov; 69(11) : e333–339. | The data relating to the maxillary and mandibular third molars are combined, without the possibility of extrapolating results on the mandibular third molars only. |
| Bortoluzzi MC, Capella DL, Barbieri T, Pagliarini M, Cavalieri T, Manfro R. A single dose of amoxicillin and dexamethasone for prevention of postoperative complications in third molar surgery: a randomized, double-blind, placebo controlled clinical trial. <i>J Clin Med Res.</i> 2013 Feb; 5(1): 26–33.                                       | Also dexamethasone is administered.  |
| Braimah RO, Ndukwe KC, Owotade JF, Aregbesola SB. Impact of oral antibiotics on health-related quality of life after mandibular third molar surgery: An observational study. <i>Niger J Clin Pract.</i> 2017 Sep; 20(9): 1189–1194.   | There is not a control group with placebo but there are only two groups taking different antibiotics.  |
| Crincoli V, Di Comite M, Di Bisceglie MB, Petrucci M, Fatone L, De Biase C, Tecco S, Festa F. Which route of antibiotic administration should be used for third molar surgery? A split-mouth study to compare intramuscular and oral intake. <i>Clin Ter.</i> 2014; 165(1) : e12–6.   | There are groups divided by the modality of administration (OS and IM).<br>There is not a control group with placebo.  |
| Diz Dios P, Tomás Carmona I, Limeres Posse J, Medina Henríquez J, Fernández Feijoo J, Alvarez Fernández M. Comparative efficacies of amoxicillin, clindamycin, and moxifloxacin in prevention of bacteremia following dental extractions. <i>Antimicrob Agents Chemother.</i> 2006 Sep; 50(9): 2996–3002.   | Also teeth different from third molars are extracted.  |
| Duvall NB, Fisher TD, Hensley D, Hancock RH, Vandewalle KS. The comparative efficacy of 0.12% chlorhexidine and amoxicillin to reduce the incidence and magnitude of bacteremia during third molar extractions: a prospective, blind, randomized clinical trial. <i>Oral Surg Oral Med Oral Pathol Oral Radiol.</i> 2013 Jun; 115(6): 752–763.      | The data relating to the maxillary and mandibular third molars are combined, without the possibility of extrapolating results on the mandibular third molars only. |

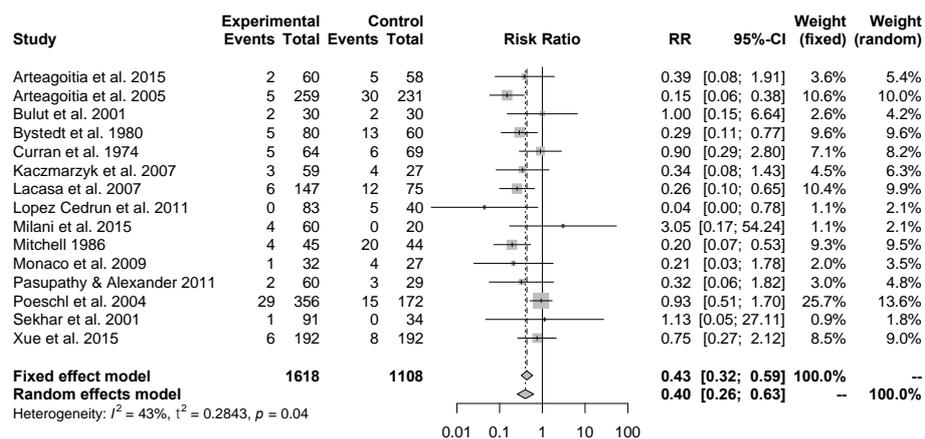
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| Foy SP, Shugars DA, Phillips C, Marciani RD, Conrad SM, White RP Jr. The impact of intravenous antibiotics on health-related quality of life outcomes and clinical recovery after third molar surgery. <i>J Oral Maxillofac Surg.</i> 2004 Jan; 62(1): 15–21.  | The study does not evaluate surgical site infection.   |
| Grossi GB, Maiorana C, Garramone RA, Borgonovo A, Creminelli L, Santoro F. Assessing postoperative discomfort after third molar surgery: a prospective study. <i>J Oral Maxillofac Surg.</i> 2007 May; 65(5): 901–917.   | The study does not evaluate surgical site infection and it is not a RCT.   |
| Halpern LR, Dodson TB. Does prophylactic administration of systemic antibiotics prevent postoperative inflammatory complications after third molar surgery? <i>J Oral Maxillofac Surg.</i> 2007 Feb; 65(2): 177–185.   | The data relating to the maxillary and mandibular third molars are combined, without the possibility of extrapolating results on the mandibular third molars only. |
| Iglesias-Martín F, García-Perla-García A, Yañez-Vico R, Aced-Jiménez E, Arjona-Gervero E, González-Padilla JD, Gutierrez-Pérez JL, Torres-Lagares D. Comparative trial between the use of amoxicillin and amoxicillin clavulanate in the removal of third molars. <i>Med Oral Patol Oral Cir Bucal.</i> 2014 Nov 1; 19(6): e612–615.             | Also teeth different from third molars are included.   |
| Ishihama K, Kimura T, Yasui Y, Komaki M, Ota Y. Azithromycin as prophylaxis for the prevention of postoperative infection in impacted mandibular third-molar surgery. <i>J Infect Chemother.</i> 2006 Feb; 12(1): 31–35.   | There is not a control group with placebo.   |
| Limeres J, Sanromán JF, Tomás I, Diz P. Patients' perception of recovery after third molar surgery following postoperative treatment with moxifloxacin versus amoxicillin and clavulanic acid: a randomized, double-blind, controlled study. <i>J Oral Maxillofac Surg.</i> 2009 Feb; 67(2): 286–291.  | There is not a control group with placebo.   |
| Luaces-Rey R, Arenaz-Búa J, Lopez-Cedrun-Cembranos JL, Martínez-Roca C, Pérttega-Díaz S, Sironvalle-Soliva S. Efficacy and safety comparison of two amoxicillin administration schedules after third molar removal. A randomized, double-blind and controlled clinical trial. <i>Med Oral Patol Oral Cir Bucal.</i> 2010 Jul 1; 15(4) :e633–638. | There is not a control group with placebo. The study compares only long and short antibiotic therapy.  |
| Menon RK, Gomez A, Brandt BW, Leung YY, Gopinath D, Watt RM, Crielaard W, Nelson KE, Botelho MG. Long-term impact of oral surgery with or without amoxicillin on the oral microbiome-A prospective cohort study. <i>Sci Rep.</i> 2019 Dec 10; 9(1): 18761.   | Cohort study.  |
| Monaco G, Staffolani C, Gatto MR, Checchi L. Antibiotic therapy in impacted third molar surgery. <i>Eur J Oral Sci.</i> 1999 Dec; 107(6): 437–441.   | The data relating to the maxillary and mandibular third molars are combined, without the possibility of extrapolating results on the mandibular third molars only. |
| Morrow AJ, Dodson TB, Gonzalez ML, Chuang SK, Lang MS. Do Postoperative Antibiotics Decrease the Frequency of Inflammatory Complications Following Third Molar Removal? <i>J Oral Maxillofac Surg.</i> 2018 Apr; 76(4): 700–708.   | Cohort study.  |
| Osborn JF, Jaques WA, Thalmann R, Spiessl B. Die Wirksamkeit systemischer Antibiotikaprophylaxe bei der operativen Entfernung unterer Weisheitszähne [Efficiency of systemic prophylactic antibiotics in the surgical removal of lower wisdom teeth]. <i>SSO Schweiz Monatsschr Zahnheilkd.</i> 1979 May; 89(5): 458–466. German.                | The data relating to the maxillary and mandibular third molars are combined, without the possibility of extrapolating results on the mandibular third molars only. |
| Rabi A, Maheshwari R, Srinivasan B, Warad LP, Suvarna CC, Tank KS. Effectiveness of Antimicrobial Therapy after Extraction of Impacted Mandibular Third Molar: A Randomized Clinical Trial. <i>J Contemp Dent Pract.</i> 2018 Jan 1; 19(1): 81–85.   | The study does not evaluate surgical site infection.   |

Siddiqi A, Morkel JA, Zafar S. Antibiotic prophylaxis in third molar surgery: A randomized double-blind placebo-controlled clinical trial using split-mouth technique. *Int J Oral Maxillofac Surg*. 2010 Feb; 39(2): 107–14. The data relating to the maxillary and mandibular third molars are combined, without the possibility of extrapolating results on the mandibular third molars only.

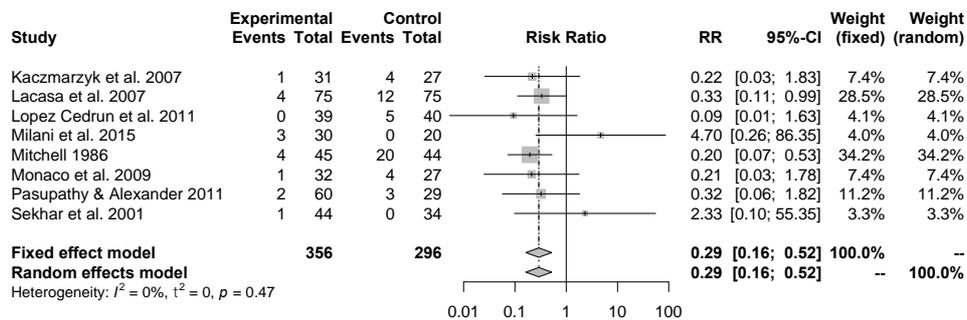
Sisalli U, Lalli C, Cerone L, Maida S, Manzoli L, Serra E, Dolci M. Amoxicillin and clavulanic acid vs. ceftazidime in the surgical extraction of impacted third molar: a comparative study. *Int J Immunopathol Pharmacol*. 2012 Jul-Sep; 25(3): 771–774. There is not a control group with placebo.

Vergis EN, Demas PN, Vaccarello SJ, Yu VL. Topical antibiotic prophylaxis for bacteremia after dental extractions. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*. 2001 Feb; 91(2): 162–5. The study does not evaluate surgical site infection but considers only bacteriemia.

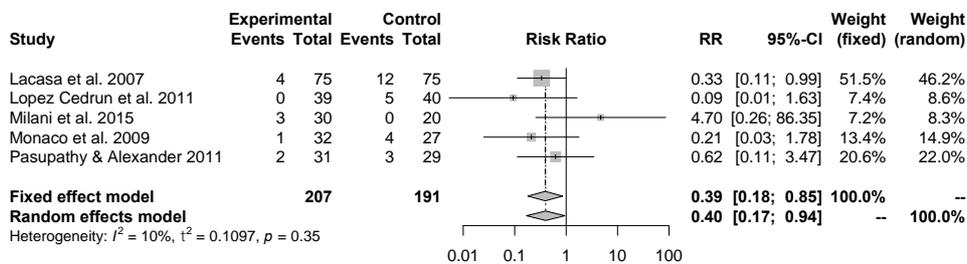
Yoshii T, Hamamoto Y, Muraoka S, Furudoi S, Komori T. Differences in postoperative morbidity rates, including infection and dry socket, and differences in the healing process after mandibular third molar surgery in patients receiving 1-day or 3-day prophylaxis with lenampicillin. *J Infect Chemother*. 2002 Mar; 8(1): 87–93. There is not a control group with placebo.



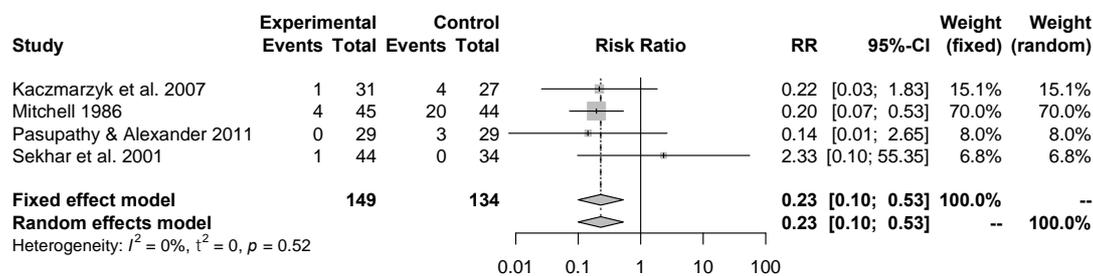
**Figure S1.** Analysis of all the articles included in the study, comparing infections occurrence in antibiotic group, with no matter of the posology, and control one.



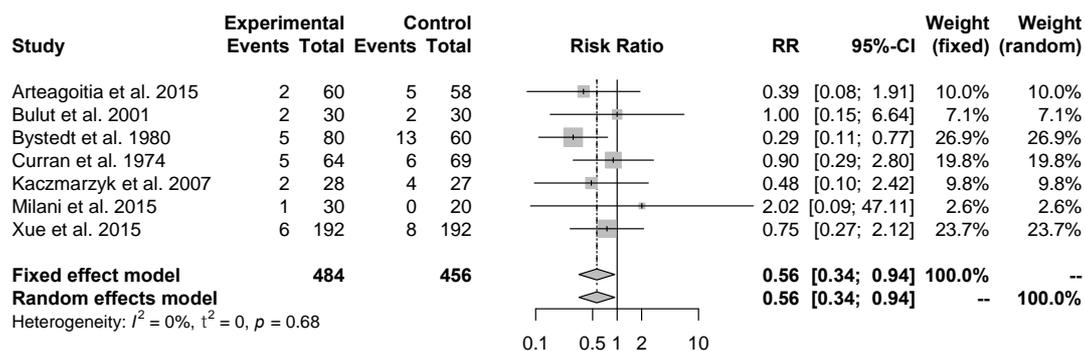
**Figure S2.** Analysis of the articles considering prophylaxis therapy, comparing infections occurrence in antibiotic group and control one.



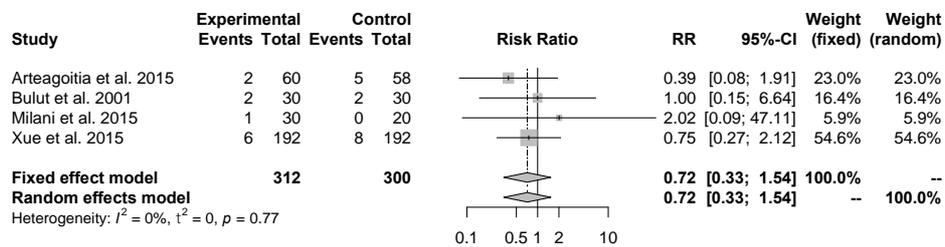
**Figure S3.** Analysis of the articles considering prophylaxis therapy only with amoxicillin, comparing infections occurrence in antibiotic group and control one.



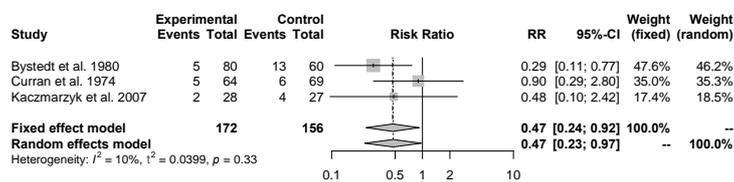
**Figure S4.** Analysis of the articles considering prophylaxis therapy with all type of antibiotic but amoxicillin, comparing infections occurrence in antibiotic group and control one.



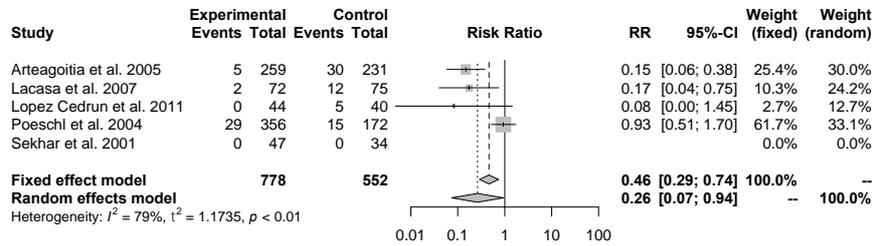
**Figure S5.** Analysis of the articles considering antibiotic therapy pre- and post- extraction, comparing infections occurrence in antibiotic group and control one.



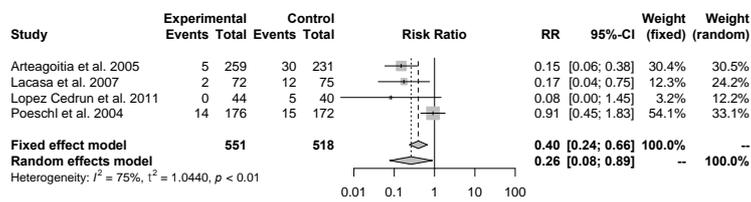
**Figure S6.** Analysis of the articles considering antibiotic therapy pre- and post- extraction only with amoxicillin, comparing infections occurrence in antibiotic group and control one.



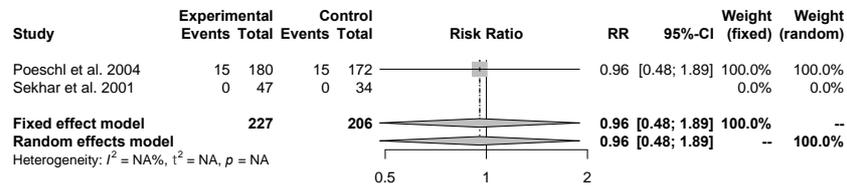
**Figure S7.** Analysis of the articles considering antibiotic therapy pre- and post- extraction with all type of antibiotic but amoxicillin, comparing infections occurrence in antibiotic group and control one.



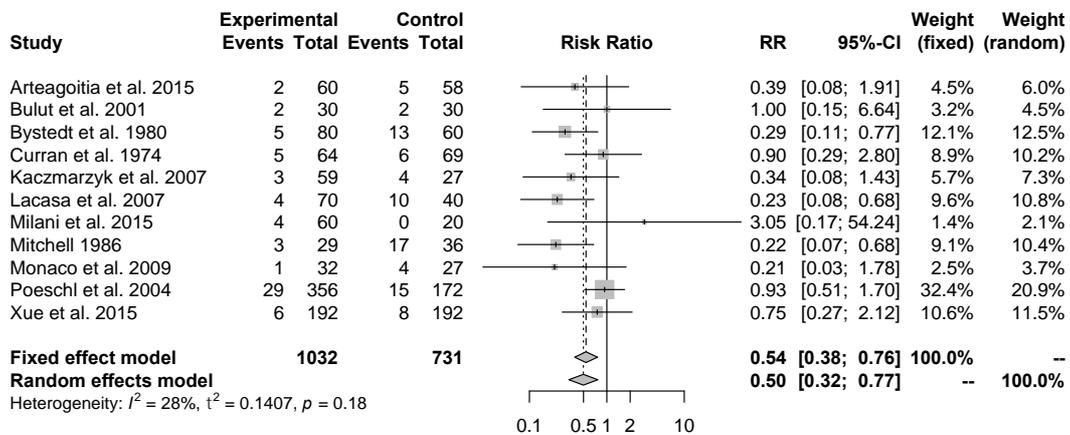
**Figure S8.** Analysis of the articles considering antibiotic therapy post- extraction, comparing infections occurrence in antibiotic group and control one.



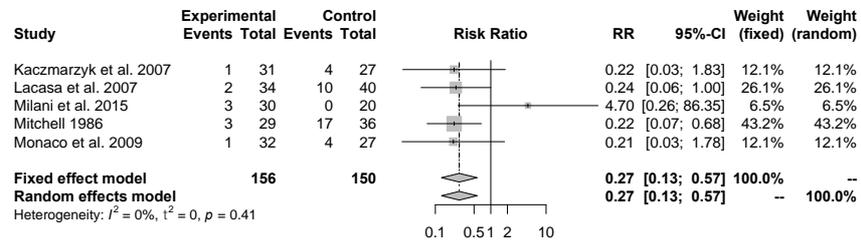
**Figure S9.** Analysis of the articles considering antibiotic therapy post- extraction only with amoxicillin, comparing infections occurrence in antibiotic group and control one.



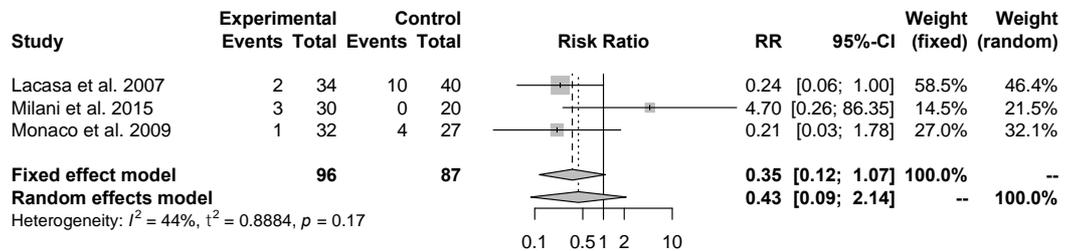
**Figure S10.** Analysis of the articles considering antibiotic therapy post- extraction with all type of antibiotic but amoxicillin, comparing infections occurrence in antibiotic group and control one.



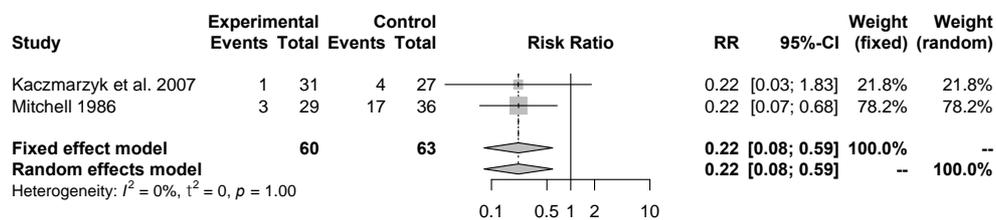
**Figure S11.** Analysis of all the articles that considered osteotomy, comparing infections occurrence in antibiotic group, with no matter of the posology, and control one with osteotomy.



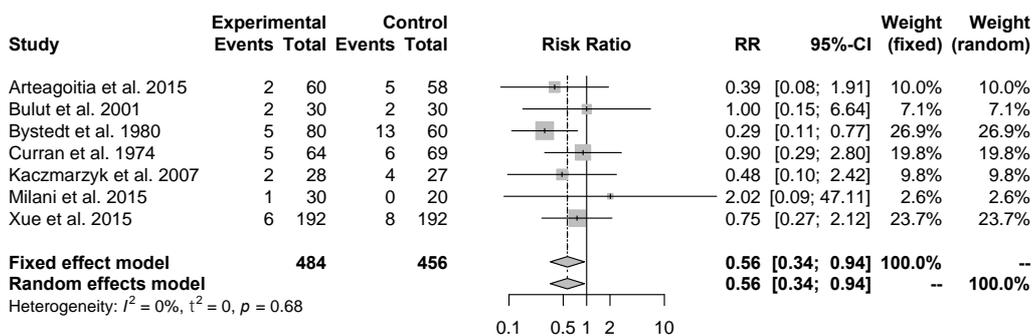
**Figure S12.** Analysis of the articles that considered osteotomy and prophylaxis therapy, comparing infections occurrence in antibiotic group and control one with osteotomy.



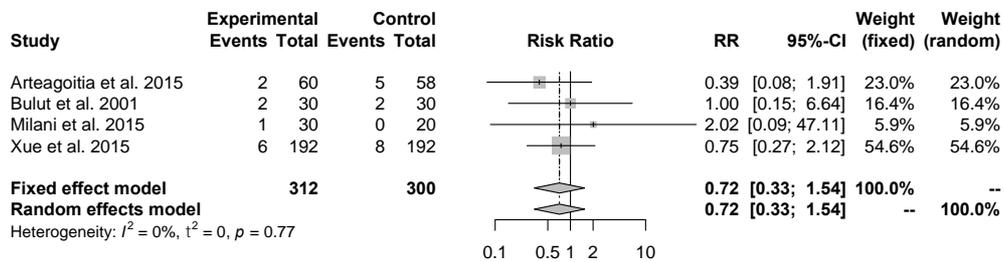
**Figure S13.** Analysis of the articles that considered osteotomy and prophylaxis therapy only with amoxicillin, comparing infections occurrence in antibiotic group and control one with osteotomy.



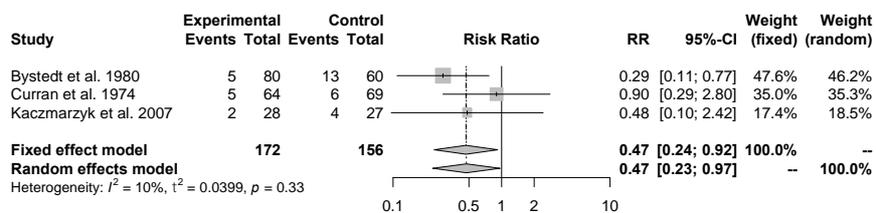
**Figure S14.** Analysis of the articles that considered osteotomy and prophylaxis therapy with all type of antibiotic but amoxicillin, comparing infections occurrence in antibiotic group and control one with osteotomy.



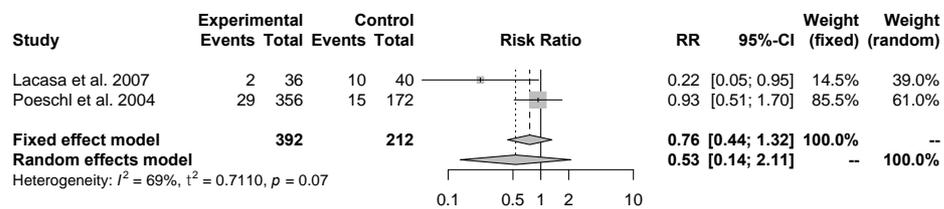
**Figure S15.** Analysis of the articles that considered osteotomy and antibiotic therapy pre- and post- extraction, comparing infections occurrence in antibiotic group and control one with osteotomy.



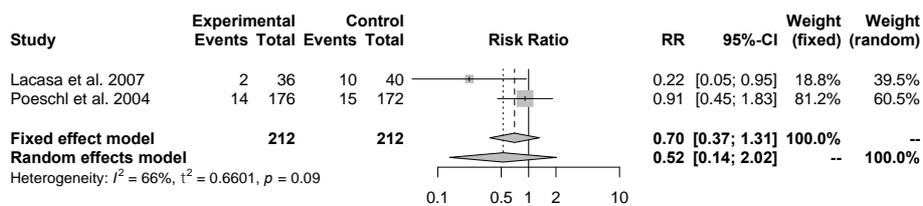
**Figure S16.** Analysis of the articles that considered osteotomy and antibiotic therapy pre- and post- extraction only with amoxicillin, comparing infections occurrence in antibiotic group and control one with osteotomy.



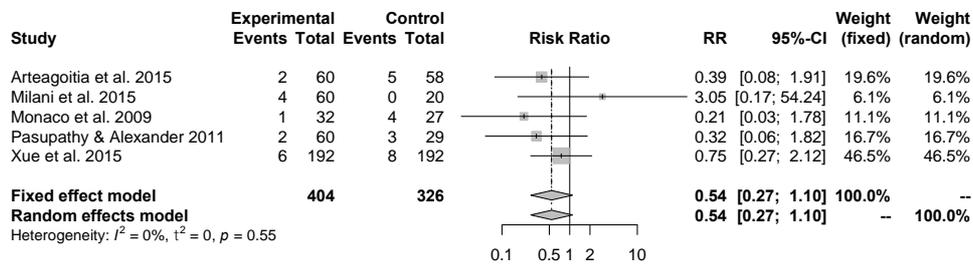
**Figure S17.** Analysis of the articles that considered osteotomy and antibiotic therapy pre- and post- extraction with all Table 18. Analysis of the articles that considered osteotomy and antibiotic therapy post- extraction, comparing infections occurrence in antibiotic group and control one with osteotomy.



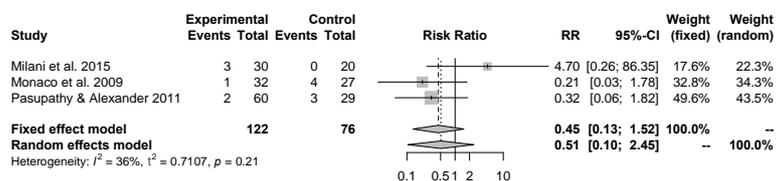
**Figure S18.** Analysis of the articles that considered osteotomy and antibiotic therapy post- extraction, comparing infections occurrence in antibiotic group and control one with osteotomy.



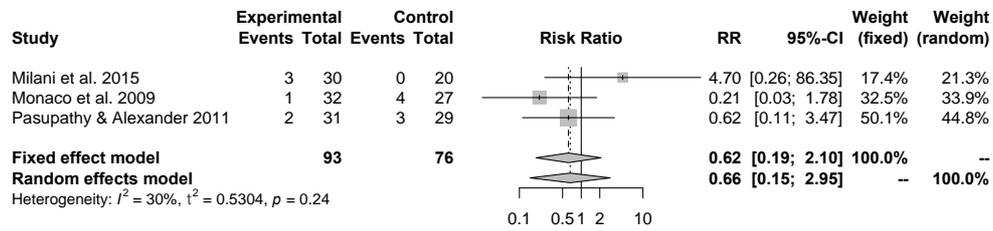
**Figure S19.** Analysis of the articles that considered osteotomy and antibiotic therapy post- extraction only with amoxicillin, comparing infections occurrence in antibiotic group and control one with osteotomy.



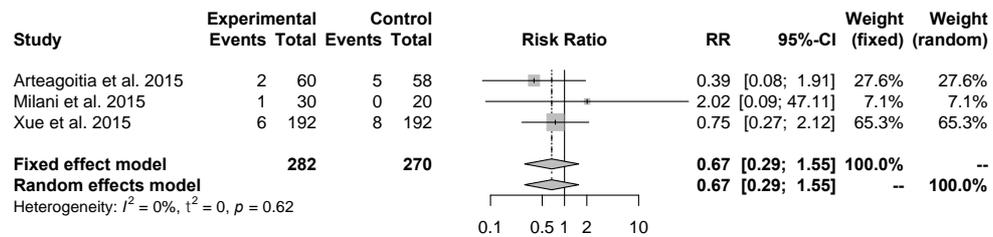
**Figure S20.** Analysis of all the articles that considered odontotomy, comparing infections occurrence in antibiotic group, with no matter of the posology, and control one with odontotomy.



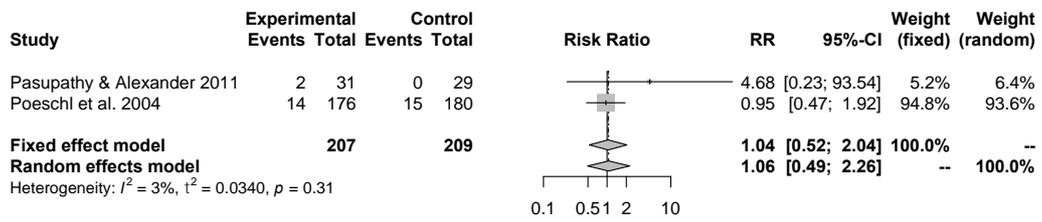
**Figure S21.** Analysis of the articles that considered odontotomy and prophylaxis therapy, comparing infections occurrence in antibiotic group and control one with odontotomy.



**Figure S22.** Analysis of the articles that considered odontotomy and prophylaxis therapy only with amoxicillin, comparing infections occurrence in antibiotic group and control one with odontotomy.



**Figure S23.** Analysis of the articles that considered odontotomy and antibiotic therapy pre- and post- extraction, comparing infections occurrence in antibiotic group and control one with odontotomy.



**Figure S24.** Analysis of the articles comparing groups treated with amoxicillin and groups treated with other antibiotics, with no matter of the posology.