

POLISH DENTAL ASSOCIATION AND NATIONAL PROGRAMME TO PROTECT ANTIBIOTICS WORKING GROUP RECOMMENDATIONS FOR ADMINISTRATION OF ANTIBIOTICS IN DENTISTRY

Tomasz Kaczmarzyk^{1,2}, Karolina Babiuch², Elżbieta Bołtacz-Rzepkowska³, Marzena Dominiak⁴, Tomasz Konopka⁵, Mariusz Lipski⁶, Dorota Olczak-Kowalczyk⁷, Adam Szela⁸, Mariusz Szuta⁹, Waleria Hryniewicz¹⁰

¹Department of Oral Surgery, Medical College, Jagiellonian University, Krakow, Poland

²Chair of Periodontics and Clinical Oral Pathology, Jagiellonian University, Krakow, Poland

³Department of Conservative Dentistry, Medical University of Łódź, Poland

⁴Chair of Oral Surgery, Medical University of Wrocław, Poland

⁵Chair of Periodontics, Medical University of Wrocław, Poland

⁶Chair of Preclinical Conservative Dentistry and Preclinical Endodontics, Pomeranian Medical University, Poland

⁷Chair of Paedodontics, Medical University of Warsaw, Poland

⁸Chair of Pharmacology, Medical University of Wrocław, Poland

⁹Chair of Cranio-maxillofacial, Oncological and Reconstructive Surgery, Medical College, Jagiellonian University, Krakow, Poland

¹⁰Department of Epidemiology and Clinical Microbiology, National Institute of Medicines, Poland

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This document shall serve as a list of recommendations of the Polish Dental Association and National Programme to Protect Antibiotics Working Group for antibiotic administration in dentistry.

There are two indications for antibiotic administration in dentistry: antibiotic prophylaxis (against surgical site infections or distant infections) and antibiotic treatment (of an already existing oral infection). It is very important to emphasize that maintaining proper oral hygiene and using aseptic and antiseptic techniques are of paramount importance for prevention of oral infections, whereas causative dental treatment constitutes an essential step in their treatment. Antibiotic administration is no substitute for the foregoing.

The following recommendations have been formulated on the basis of the available scientific data regarding specific areas of dentistry. They do not, however, override in any way whatsoever the individual responsibility of dentists to make appropriate and accurate decisions in consideration of each patient's health condition and in consultation with that patient or the patient's caregiver where appropriate or necessary. It is also the dentist's responsibility to verify the rules and regulations applicable to medications at the time of prescription.

The present recommendations have been mostly formulated on the basis of the consensus of opinion of the experts and/or of the results of retrospective studies (level of evidence C) or data derived from single randomized clinical trials (level B) as data derived from multiple randomized clinical trials or meta-analyses (level A) are available only for very few indications for antibiotic administration in dentistry.

Members of the Working Group preparing these recommendations stress that antibiotics are significantly misused and overused in dentistry, despite the fact that an alarming increase in bacterial resistance to antibiotics is observed, and it constitutes one of the major problems of contemporary medicine. Consequently, whenever antibiotic administration is considered, a dentist should weigh the potential benefits and risks resulting from this decision, since in dentistry in most cases individual (for a patient) and collective (for a society) risks of antibiotic administration outweigh its possible benefits (prevention or treatment of infection).

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ADDRESS FOR CORRESPONDENCE: Tomasz Kaczmarzyk, Department of Oral Surgery, Medical College, Jagiellonian University, Krakow, Poland,
e-mail: tomkaczm@cm-uj.krakow.pl

POLISH DENTAL ASSOCIATION AND NATIONAL PROGRAMME TO PROTECT ANTIBIOTICS WORKING GROUP RECOMMENDATIONS FOR ANTIBIOTICS ADMINISTRATION IN DENTISTRY

RECOMMENDATIONS FOR ANTIBIOTIC PROPHYLAXIS AGAINST SURGICAL SITE INFECTIONS

GENERAL RECOMMENDATIONS FOR ANTIBIOTIC PROPHYLAXIS AGAINST SURGICAL SITE INFECTIONS IN ORAL AND MAXILLOFACIAL SURGERY

- Maintaining proper oral hygiene and using aseptic and antiseptic techniques are of paramount importance for prevention of oral and maxillofacial infections.
- Routine administration of antibiotic prophylaxis in immunocompetent patients is not recommended; the decision of administration of antibiotic prophylaxis should be very prudent.
- Antibiotic prophylaxis is recommended in immunocompromised¹ patients, in consultation with the attending physician.
- Antibiotic prophylaxis should be administered 30-60 minutes before commencement of surgery.
- For prophylaxis, it is recommended to administer only one dose of an antibiotic (one-shot prophylaxis) and no further doses after completion of surgery should be administered, with the exceptions presented in certain detailed recommendations (ultra-short, short-term and long-term prophylaxis).
- Unless otherwise specified in the detailed recommendation, for antibiotic prophylaxis in dentistry amoxicillin without clavulanic acid in a single dose of 2000 mg is recommended; patients allergic to penicillins should be given cefazolin² in a single dose of 1000 mg or clindamycin in a single dose of 600 mg.
- Unless otherwise specified in the detailed recommendation, for antibiotic prophylaxis in pediatric patients amoxicillin without clavulanic acid in a single dose of 50 mg/kg is recommended; patients allergic to penicillins should be given cefazolin² in a single dose of 50 mg/kg or clindamycin in a single dose of 20 mg/kg.

¹ An immunocompromised patient is usually a patient: (1) affected with hematological or congenital/acquired immunodeficiency (e.g. hypogammaglobulinemia, lymphoma, leukemia, Chediak-Higashi syndrome, DiGeorge syndrome, HIV+ with CD4 count < 100/mm³ and neutrophil count < 500/mm³), (2) on immunosuppressive, cytotoxic or steroid therapy (e.g. transplant or cancer patients, systemic connective tissue disease), (3) affected with chronic and unregulated metabolic disease (e.g. poor glycemic control diabetes, hepatic cirrhosis, renal insufficiency, malnutrition).

² Cephalosporins should not be used in patients with a history of anaphylaxis, angio-edema, or urticaria after intake of penicillins.

SPECIFIC RECOMMENDATION FOR ANTIBIOTIC PROPHYLAXIS AGAINST SURGICAL SITE INFECTIONS IN THIRD MOLAR SURGERY

- Routine administration of antibiotic prophylaxis in third molar surgery in immunocompetent patients is not recommended; antibiotic prophylaxis should be considered in immunocompromised patients in consultation with the attending physician or whenever it is necessary to perform surgery in the course of acute pericoronitis.

SPECIFIC RECOMMENDATION FOR ANTIBIOTIC PROPHYLAXIS AGAINST SURGICAL SITE INFECTIONS IN IMPLANT SURGERY

- Routine administration of antibiotic prophylaxis in implant surgery in immunocompetent patients is not recommended; antibiotic prophylaxis should be considered in immunocompromised patients in consultation with the attending physician.
- It is recommended to consider administration of antibiotic prophylaxis in implant procedures involving bone grafting.

SPECIFIC RECOMMENDATION FOR ANTIBIOTIC PROPHYLAXIS AGAINST SURGICAL SITE INFECTIONS IN BONE GRAFTING SURGERY

- It is recommended to consider administration of antibiotic prophylaxis in bone grafting surgery.

SPECIFIC RECOMMENDATION FOR ANTIBIOTIC PROPHYLAXIS AGAINST SURGICAL SITE INFECTIONS IN DENTO-ALVEOLAR SURGERY

- Routine administration of antibiotic prophylaxis in dento-alveolar surgery (e.g. surgical extraction, cystectomy or intraosseous bone tumor removal) in immunocompetent patients is not recommended; antibiotic prophylaxis should be considered in immunocompromised patients, in consultation with the attending physician.
- It is recommended to administer one dose of antibiotic prophylaxis in case of dento-alveolar surgery involving exposure of antral or nasal mucosa as well as involving removal of extensive bone cysts and tumors.

SPECIFIC RECOMMENDATION FOR ANTIBIOTIC PROPHYLAXIS AGAINST SURGICAL SITE INFECTIONS IN ENDODONTIC SURGERY

- Routine administration of antibiotic prophylaxis in endodontic surgery in immunocompetent patients

is not recommended; antibiotic prophylaxis should be considered in immunocompromised patients, in consultation with the attending physician.

SPECIFIC RECOMMENDATION FOR ANTIBIOTIC PROPHYLAXIS AGAINST SURGICAL SITE INFECTIONS IN PERIODONTAL SURGERY

- Routine administration of antibiotic prophylaxis in periodontal surgery in immunocompetent patients is not recommended; antibiotic prophylaxis should be considered in immunocompromised patients, in consultation with the attending physician.

SPECIFIC RECOMMENDATION FOR ANTIBIOTIC PROPHYLAXIS AGAINST SURGICAL SITE INFECTIONS IN ORTHOGNATHIC SURGERY

- It is recommended to administer antibiotic prophylaxis in orthognathic procedures with intraoral surgical approach or involving exposure of antral or nasal mucosa.
- In this indication IV ampicillin/sulbactam administration 30-60 minutes before commencement of surgery is recommended: in adults in a dose of 1500 mg and in children in a dose of 50 mg/kg, and:
 - during prolonged (> 4 h) procedures another dose of antibiotic should be administered;
 - in extensive procedures involving high blood loss (> 1000 ml) it is recommended to continue administration of antibiotic prophylaxis every 6-8 h during the first 24 h after the first dose (ultra-short prophylaxis).
- Patients allergic to penicillin should be given clindamycin in a dose of 600 mg (adults) or 20 mg/kg (children), according to the abovementioned design.

SPECIFIC RECOMMENDATION FOR ANTIBIOTIC PROPHYLAXIS AGAINST SURGICAL SITE INFECTIONS IN MAXILLOFACIAL SURGERY

- Routine administration of antibiotic prophylaxis in soft tissue procedures involving extraoral surgical approach (e.g. parotidectomy) or in neck dissections without opening of airways is not recommended.
- Antibiotic prophylaxis is recommended in maxillofacial procedures involving: bone resection, free or pediculated flaps, neck dissections with opening of airways and bone grafting.
- In these indications IV ampicillin/sulbactam administration 30-60 minutes before commencement of surgery is recommended: in adults in a dose of 1500 mg and in children in a dose of 50 mg/kg, and:
 - during prolonged (> 4 h) procedures another dose of antibiotic should be administered;
 - in extensive procedures involving high blood loss (> 1000 ml) it is recommended to continue administration of antibiotic prophylaxis every 6-8 h during the first 24 h after the first dose (ultra-short prophylaxis).

- Patients allergic to penicillin should be given clindamycin in a dose of 600 mg (adults) or 20 mg/kg (children), according to the abovementioned design.

SPECIFIC RECOMMENDATION FOR ANTIBIOTIC PROPHYLAXIS AGAINST SURGICAL SITE INFECTIONS IN PATIENTS ON ANTIRESORPTIVE/ANTIANGIOGENIC THERAPY OR WITH A HISTORY OF MAXILLOFACIAL RADIOTHERAPY

- It is recommended to administer antibiotic prophylaxis in patients taking bisphosphonates, denosumab or bevacizumab before any surgical procedure involving bone surgery (e.g. exodontia, dento-alveolar surgery, endodontic or periodontal surgery); antibiotic therapy should be initiated one day before surgery and continued until the 3rd postoperative day (short-term prophylaxis), with the exception of cases of concurrent risk factors for medication-related osteonecrosis of the jaw (therapy with zoledronic acid, intravenous route of bisphosphonate administration, therapy > 3 years, previous episode of osteonecrosis of the jaw) where antibiotic prophylaxis should be continued up until the 14th postoperative day (long-term prophylaxis).
- It is recommended to administer antibiotic prophylaxis in patients with a history of maxillofacial radiotherapy before any surgical procedure involving bone surgery (e.g. exodontia, dento-alveolar surgery, endodontic or periodontal surgery); antibiotic therapy should be initiated one day before surgery and continued until the 3rd postoperative day (short-term prophylaxis).
- In these indications amoxicillin/clavulanic acid is recommended: in adults – 1000 mg (875 mg + 125 mg) BID and in children – (45 mg + 6.4 mg)/kg/day in 2 divided doses; patients allergic to penicillins should be medicated with clindamycin: in adults 300 mg TID and in children – 8-16 mg/kg/day in 3-4 divided doses.

SPECIFIC RECOMMENDATION FOR ANTIBIOTIC PROPHYLAXIS AGAINST INFECTIONS OF WOUNDS OF FACIAL SKIN OR ORAL MUCOSA

- Antibiotic prophylaxis against infections of minor, fresh³ (< 12 h) wounds in immunocompetent patients is not recommended.
- Antibiotic prophylaxis is recommended in the case of wounds following:
 - blunt injury,
 - gunshot, bite or avulsion injury,
 - injury inflicted with dirty object,
 - dirty wounds, > 12 h old with no previous dressing,

³ Due to the very good blood supply of head and neck tissues, wounds in these areas usually maintain their sterility for longer periods than in other anatomical sites.

- injuries in immunocompromised patients, in consultation with the attending physician.
- In these indications it is recommended to administer a single dose of either IV ampicillin/sulbactam: adults – 1500 mg, children – 50 mg/kg or PO amoxicillin/clavulanic acid: adults – 2000 mg, children – (45 mg + 6.4 mg)/kg.

SPECIFIC RECOMMENDATION FOR ANTIBIOTIC PROPHYLAXIS AGAINST INFECTIONS OF BONE FRACTURES

- Antibiotic prophylaxis against infection of closed fractures (e.g. fractures of condyle or mandible ramus) in immunocompetent patient is not recommended, insofar as conservative or surgical treatment involving the extraoral approach is applied.
- Antibiotic prophylaxis is recommended in the case of:
 - open fractures (e.g. mandible body fracture),
 - fractures with delayed treatment,
 - pathologic fractures,
 - surgically treated fractures involving the intra-oral approach,
 - comminuted fractures,
 - fractures involving nasal or paranasal sinuses mucosa exposure,
 - fractures in immunocompromised patients, in consultation with the attending physician.
- In these indications clindamycin in a single dose of 600 mg in adults or 20 mg/kg in children is recommended.

RECOMMENDATIONS FOR ANTIBIOTIC PROPHYLAXIS AGAINST DISTANT INFECTIONS

RECOMMENDATION FOR ANTIBIOTIC PROPHYLAXIS AGAINST INFECTIVE ENDOCARDITIS (IE) FOLLOWING DENTAL PROCEDURES⁴

- Strict oral hygiene and frequent dental follow-up in IE high-risk patients are decidedly recommended.
- It is recommended that patients with cardiac conditions at the highest risk of IE, including:
 - patients with any prosthetic valve, including a transcatheter valve, or those in whom any prosthetic material was used for cardiac valve repair;
 - patients with congenital heart disease (CHD):
 - any type of cyanotic CHD,
 - any type of CHD repaired with a prosthetic material, whether placed surgically or by percutaneous techniques, up to 6 months after the procedure or lifelong if residual shunt or valvular regurgitation remains;

⁴ This recommendation conforms to the 2015 Guidelines of European Society of Cardiology for the management of infective endocarditis (Habib, et al. 2015 ESC Guidelines for the management of infective endocarditis. Eur Heart J 2015; 36: 3075-3123).

- patients with a previous episode of IE,
- 30-60 minutes before commencement of a dental procedure requiring manipulation of the gingival or periapical region of the teeth or perforation of oral mucosa should receive:
 - PO amoxicillin (without clavulanic acid) or IV ampicillin (without sulbactam): adults – 2000 mg, children – 50 mg/kg;
- in patients allergic to penicillins one of the following should be administered 30-60 minutes before the procedure:
 - PO or IV clindamycin: adults – 600 mg, children – 20 mg/kg,
 - IV cefalexin⁵: adults – 2000 mg, children – 50 mg/kg,
 - IV cefazolin⁵: adults – 1000 mg, children – 50 mg/kg,
 - IV ceftriaxone⁵: adults – 1000 mg, children – 50 mg/kg.
- Antibiotic prophylaxis is not recommended in any other congenital or acquired heart disease or in patients with a history of myocardial or cerebral infarction, bypass surgery or patients with a implanted pacemaker.
- Antibiotic prophylaxis is not recommended for local anesthetic injections in non-infected tissues, treatment of dental caries, removal of sutures, placement or adjustment of removable prosthodontic or orthodontic appliances or braces and following the shedding of deciduous teeth or trauma to the lips or oral mucosa.

RECOMMENDATION FOR ANTIBIOTIC PROPHYLAXIS AGAINST PERIPROSTHETIC JOINT INFECTIONS FOLLOWING DENTAL PROCEDURES

- Antibiotic prophylaxis in patients with artificial joint prostheses before any dental procedure is not recommended.

RECOMMENDATION FOR ANTIBIOTIC THERAPY OF ODONTOGENIC INFECTIONS

- Antibiotic therapy is not recommended for treatment of limited, non-spreading odontogenic infections which are not associated with the impaired general state in immunocompetent patients.
- Local treatment consisting of pus drainage and extraction or endodontic therapy of a causative tooth is fundamental for treatment of odontogenic infections.
- Antibiotic therapy of odontogenic infections is indicated in immunocompromised patients (in consul-

⁵ Cephalosporins should not be used in patients with a history of anaphylaxis, angio-edema, or urticaria after intake of penicillins.

tation with the attending physician where possible); however, in immunocompetent patients antibiotic therapy is only complementary to the local treatment and should be administered solely in patients with an impaired general state (high fever, malaise, vertigo, dehydration, tachycardia) or in cases of inflammation involving extraoral anatomical spaces with a tendency to spread.

- Only in exceptional circumstances, when there is no possibility of immediate causative treatment (e.g. high trismus, lack of efficacy of local anaesthesia), may administration of antibiotic to reduce inflammation be considered; however, causative treatment should be implemented without any further delay.
- In the case of empirical antibiotic therapy (without results of laboratory testing for bacterial sensitivity) amoxicillin without clavulanic acid should be administered as the first-line therapy (Table 1).

- Clindamycin is recommended only in patients allergic to penicillins, and it should be administered every 6-8 h (but not every 12 h), and a single dose should not exceed 300 mg (Table 1).
- It is recommended that every patient treated with antibiotic should be followed up on a regular basis and the first follow-up should take place not later than 48-72 h after commencement of antibiotic therapy.
- Antibiotic therapy should be continued until significant improvement in the patient's general state (decrease of body temperature, wellbeing), in which case antibiotic therapy should be ceased.
- It is recommended that if there is no improvement in the patient's general state after 72 h of antibiotic therapy a second-line antibiotic should be considered, and the efficacy of drainage should be re-evaluated.
- The list of recommended antibiotics in empirical therapy is annexed to this recommendation (Table 1).

TABLE 1. Antibiotics recommended for treatment of odontogenic infections

		Adults	Children
First-line therapy			
Oral administration	Amoxicillin	500 mg TID or 750-1000 mg BID; TID scheme usually shows greater effectiveness	children up to 40 kg: 20-40 mg/kg/day in 3 divided doses children over 40 kg: as in adults
Parenteral administration	Ampicillin	500 mg QID	children up to 20 kg: 12.5 mg/kg QID children over 20 kg: as in adults
Second-line therapy*			
Oral or parenteral administration	Amoxicillin/Clavulanic acid	875 mg + 125 mg BID	children up to 40 kg: (45 mg + 6.4 mg)/kg/day in 2 divided doses children over 40 kg: as in adults
	Clindamycin	150 mg QID or 300 mg TID [†]	children up to 14 years of age: 8-16 mg/kg/day in 3-4 divided doses children over 14 years of age: as in adults
Parenteral administration	Ampicillin/Sulbactam	500 mg + 250 mg TID or QID	(100 mg + 50 mg)/kg/day in 3-4 divided doses
Alternative therapy**			
Oral administration	Cefuroxime axetil	500 mg BID	children over 3 months of age: 20 mg/kg/day in 2 divided doses children over 12 years of age: 250 mg BID
	Spiramycin	3,000,000 IU BID	150,000 IU/kg/day in 2-3 divided doses
	Clarithromycin	250 mg BID	body mass up to 8 kg: 7.5 mg/kg BID body mass 8-11 kg: 62.5 mg BID body mass 12-19 kg: 125 mg BID body mass 20-30 kg: 187.5 mg BID body mass over 30 kg: as in adults
	Azithromycin	500 mg QD	10 mg/kg/day QD
Oral or parenteral administration	Metronidazole (usually co-administered with amoxicillin or penicillin V)	500 mg TID	up to 12 years of age: 7.5 mg/kg TID over 12 years of age: as in adults

*Recommended whenever first-line therapy is difficult, improper or contraindicated or when there is no response to first-line therapy after 48-72h.

**Recommended whenever contraindications for first- and second-line therapy occur.

[†]Single oral dose of clindamycin should not exceed 300 mg and intervals between doses should not be longer than 8 h; single oral dose of clindamycin over 450 mg should be reserved for parenteral administration for treatment of severe and life-life-threatening infections.

RECOMMENDATION FOR ANTIBIOTIC THERAPY IN PERIODONTITIS AND PERIIMPLANTITIS

- Routine administration of antibiotics for the treatment of periodontitis and peri-implantitis in immunocompetent patients is not recommended; mechanical therapy involving removal of supra- and subgingival deposits of calculus and dental plaque by means of scaling and root planing (SRP) plays a fundamental role in periodontal therapy.
- Systemic antibiotic administration is recommended in patients with acute symptoms of the periodontal disease such as multiple periodontal abscesses and necrotizing periodontal diseases with systemic involvement (high fever, malaise, vertigo, dehydration, tachycardia).
- Administration of antibiotic therapy should also be considered in the case of *A. actinomycetemcomitans* and/or *P. gingivalis* infection in the course of refractory periodontitis in stage IV of the disease (according to the 2017 classification of periodontal and peri-implant diseases)[11].
- It is recommended to consider systemic antibiotic administration for treatment of periodontitis and peri-implantitis in immunocompromised patients (in consultation with the attending physician).
- Administration of systemic antimicrobials should be preceded by culture and sensitivity microbiological testing whenever possible.
- In the case of empirical antibiotic therapy of multiple periodontal abscesses amoxicillin/clavulanic acid is recommended: in adults and children over 40 kg – 1000 mg (875 mg + 125 mg) BID for 5 days, and in children up to 40 kg – (45 mg + 6.4 mg)/kg/day in two divided doses for 5 days; in patients allergic to penicillins azithromycin is recommended: in adults – 500 mg QD for 3 days, and in children – 10 mg/kg QD for 3 days; in this indication administration of antibiotic should be simultaneous with mechanical therapy.
- In the case of empirical antibiotic therapy of necrotizing periodontal diseases administration of metronidazole is recommended: in adults and children over the age of 12 – 250 mg TID for 7 days, and in children up to 12 years of age – 7.5 mg/kg TID for 7 days; in this indication administration of antibiotic should be simultaneous with mechanical therapy.
- In the case of empirical antibiotic therapy of stage IV of periodontitis, co-administration of amoxicillin (without clavulanic acid) and metronidazole for 7 days is recommended according to the following scheme:
 - in adults and children over 40 kg amoxicillin should be administered in a dose of 500 mg TID, and in children up to 40 kg – 40 mg/kg/day in 3 divided doses,
 - in adults and children over the age of 12 metronidazole should be administered in a dose of

250 mg TID, and in children up to 12 years of age – 7.5 mg/kg TID,

- in patients allergic to penicillins, administration of metronidazole alone according to the above scheme is recommended,
- it is recommended to commence antibiotic therapy on the day of completion of mechanical therapy.

RECOMMENDATIONS FOR THE USE OF ANTIBIOTICS IN ENDODONTICS⁶

RECOMMENDATION FOR SYSTEMIC ANTIBIOTIC PROPHYLAXIS IN ENDODONTICS

- Routine administration of antibiotic prophylaxis before root canal treatment in immunocompetent patients is not recommended.
- Antibiotic prophylaxis before root canal treatment is recommended only in:
 - immunocompromised patients, after considering the state and control of the disease, risk of infection-related complications and risk of adverse drug reactions,
 - patients with cardiac conditions at the highest risk of IE,
 - patients with previous radiotherapy of the maxillofacial region.
- In the event of a decision of antibiotic prophylaxis administration before root canal treatment, antibiotic selection and dosing should follow “Recommendation for antibiotic prophylaxis against infective endocarditis (IE) following dental procedures”.

RECOMMENDATION FOR SYSTEMIC ANTIBIOTIC THERAPY IN ENDODONTICS

- Local treatment plays a fundamental role in therapy of endodontic infections, whereas adjunctive systemic antibiotic treatment is indicated only in the following conditions:
 - acute periapical abscess in immunocompromised patients,
 - acute periapical abscess with systemic involvement (high fever, malaise, vertigo, dehydration, tachycardia) or advanced local signs (lymphadenopathy, extensive swelling, severe trismus), irrespective of patient’s immunological status,
 - progressive infections (rapid onset of severe infection in less than 24 h, cellulitis/phlegmon, acute osteomyelitis).

⁶ Recommendations of Polish Dental Association for the use of antibiotics in endodontics are in line with the position statement of the European Society of Endodontology from the year 2017 (Segura-Egea, et al. European Society of Endodontology position statement: the use of antibiotics in endodontics. Int Endod J 2017; 51: 20-25).

- Adjunctive systemic antibiotic treatment is not recommended in the following conditions:
 - symptomatic irreversible pulpitis (pain with no other signs and symptoms of infection),
 - pulp necrosis,
 - symptomatic periapical periodontitis (spontaneous pain, pain to percussion and biting, widening of periodontal ligament space),
 - chronic periapical periodontitis/chronic periapical abscess (periapical radiolucency, sinus tract),
 - acute periapical abscess without systemic involvement (normal body temperature, patient well-being) and with mild localized symptoms (e.g. localized swelling).
- In the event of a decision of antibiotic therapy of endodontic infection, antibiotic selection and dosing should follow “Recommendations for antibiotic therapy of odontogenic infections”.

RECOMMENDATION FOR LOCAL ANTIBIOTIC APPLICATION IN ENDODONTICS

- Antibiotics are not recommended in pulp capping procedures or for root canal disinfection.
- Due to the fact that the antibiotic mixture composed of ciprofloxacin, metronidazole and minocycline known as triple antibiotic paste (TAP) may cause dentine discoloration and that there is a lack of strong evidence to support the use of antibiotics in regenerative endodontic procedures, the use of calcium hydroxide for pulp revascularization is recommended.

RECOMMENDATION FOR THE USE OF ANTIBIOTICS IN DENTAL TRAUMA⁷

- Routine administration of antibiotics is not recommended in the following conditions:
 - crown fracture, root fracture, concussion, subluxation and partial luxation of a permanent tooth,
 - trauma to primary dentition.
- Avulsion of a permanent tooth is an indication for systemic antibiotic administration, in which case tetracycline is recommended in the dose of 25 mg/kg/day

⁷ Recommendations of the Polish Dental Association for the use of antibiotics in dental traumatology are in line with guidelines of the International Association of Dental Traumatology (Diangelis, *et al.* International Association of Dental Traumatology guidelines for the management of traumatic dental injuries: 1. Fractures and luxations of permanent teeth. *Dent Traumatol* 2012; 28: 2-12; Andersson, *et al.* International Association of Dental Traumatology guidelines for the management of traumatic dental injuries: 2. Avulsion of permanent teeth. *Dent Traumatol* 2012; 28: 88-96; Malmgren, *et al.* International Association of Dental Traumatology guidelines for the management of traumatic dental injuries: Injuries in the primary dentition. *Dent Traumatol* 2012; 28: 174-82).

for the first week after the replantation procedure; due to the risk of discoloration of permanent teeth, in non-penicillin-allergic children up to 12 years of age phenoxymethylpenicillin (penicillin V) or amoxicillin (without clavulanic acid) should be considered in an appropriate dose for the age and weight; in the case of replantation of an immature tooth, topical application of antibiotic (minocycline or doxycycline, 1 mg per 20 ml of saline for 5 min) on the root surface before replantation should be considered.

- The decision about the systemic use of an antibiotic may be dictated by associated injuries and the patient's medical status.

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