

STOMATOLOŠKE INTERVENCIJE KOD PACIJENATA SUSPEKTNIH NA SUBAKUTNI BAKTERIJSKI ENDOKARDITIS

DENTAL INTERVENTIONS WITH PATIENTS SUSCEPTIVE TO SUBACUTE BACTERIAL ENDOCARDITIS

Goran Jovanović¹, Nikola Burić¹, Ljiljana Kesić², Nebojša Krunic³, Jasmina Stanković⁴

¹KLNIKA ZA STOMATOLOGIJU – ODELJENJE ZA ORALNU HIRURGIJU, ²KLNIKA ZA STOMATOLOGIJU – ODELJENJE ZA PARADONTOLOGIJU I ORALNU MEDICINU, ³KLNIKA ZA STOMATOLOGIJU – ODELJENJE ZA STOMATOLOŠKU PROTETIKU, MEDICINSKI FAKULTET, DOM ZDRAVLJA – ORGANIZACIONA JEDINICA ZDRAVSTVENE ZAŠTITE ZUBA – ODELJENJE ZA STOMATOLOŠKU PROTETIKU, NIŠ, SRBIJA, SRBIJA I CRNA GORA

¹CLINIC OF STOMATOLOGY – DEP. OF ORAL SURGERY, ²CLINIC OF STOMATOLOGY – DEP. OF PERIODONTOLOGY AND ORAL DISEASE, ³CLINIC OF STOMATOLOGY – DEP. OF DENTAL PROSTHODONTICS, ⁴HEALTH CENTER – DENTAL HEALTH CARE UNIT – DEP. OF DENTAL PROSTHODONTICS

Kratak sadržaj

Tranzitorna bakterijemija često prati mnoge krvave stomatološke intervencije. Kod određenog broja srčanih bolesnika ona može da prouzrokuje nastanak subakutnog bakterijskog endokarditisa. U radu je ukazan značaj poznavanja struktурне bolesti srca koja je dobra predispozicija za nastanak bolesti, kao i na stomatološke procedure koje izazivaju snažnu bakterijemiju i mogu, kod rizičnih bolesnika, da prouzrokuju subakutni bakterijski endokarditis. Antibotska profilakska je upravljenja prema alfa hemolitičnom streptokoku (*Streptococcus viridans*), daje se jednokratno i ima za cilj da zaštititi pacijenta samo u vreme trajanja bakterijemije, čime se sprečava pojava rezistentnih sojeva. U radu je ukratko opisan praktičan postupak stomatologa kod ove grupe rizičnih bolesnika što mogućnost nastanka oboljenja svodi na minimum. Akcenat je stavljen na antibiotski i stomatološki profilaktički program, kao i na velike zablude koje vladaju o nastanku subakutnog bakterijskog endokarditisa.

Ključne reči: subakutni bakterijski endokarditis, tranzitorna bakterijemija, stomatološke intervencije, prevencija

Uvod

Tranzitorna bakterijemija (TB) je posledica mnogih krvavih stomatoloških zahvata pri čemu mikroorganizmi iz usne duplje nesmetano

Abstract

Bloody dental interventions are frequently accompanied by transitory bacteremia. It may cause generation of subacute bacterial endocarditis with a certain number of heart patients. Pointed out in this paper is the importance of the knowledge on the heart structural disease, which is a good predisposition for generation of the disease. Also pointed out are dental procedures that cause strong bacteremia and may, with different patients, cause subacute bacterial endocarditis. Antibiotic prophylaxis is directed towards the alpha hemolytic streptococcus (*streptococcus viridans*), is practiced as a one-shot administration for the purpose of protecting the patient only at the time of bacteremia, preventing thus generation of resistant varieties. Given in the paper is a short description of the dentist practical procedure with this group of risky patients minimizing the possibility of the disease generation. Pointed out is the antibiotic and dental prophylactic programme as well as some governing mistakes on the subacute bacterial endocarditis generation.

Key words: subacute bacterial endocarditis, transitory bacteremia, dental interventions, prevention

Introduction

Transitory bacteremia (TB) is a consequence of many bloody dental interventions on which occasion microorganisms from the oral cavity

prelaze u krvotok i bivaju rasejani po čitavom organizmu.¹ Vrlo brzo, aktivacijom retikulo-endotelijalnog sistema, mikroorganizmi bivaju u potpunosti eliminisani. Smatra se da TB traje oko 15 minuta.² Kod najvećeg broja pacijenata TB prolazi bez ikakvih komplikacija. Međutim, ukoliko u tkivu domaćina postoje tzv. slabe tačke (oštećenja i promene na srčanom endokardu) mikroorganizmi mogu da se na njih nasele i započnu svoj rast i razmnožavanje, što stvara povoljne uslove za nastanak subakutnog bakterijskog endokarditisa (SBE) koji je pre pojave antibiotika bio visoko letalna bolest.^{3,4} SBE se dešava na terenu strukturno izmenjene valvule i obično je uzrokovan manje virulentnom bakterijom nakon bakterijemije sa udaljenih mesta, kao što su desni, gastrointestinalni ili genitourinarni sistem.

SBE i danas, prate visok morbiditet i mortalitet uprkos popravljenoj prognozi zbog napretka u antimikrobnoj terapiji.⁵ Upravo zbog ovoga primarna prevencija SBE je vrlo važna.

Martin i sar.⁶ smatraju da su stomatološke intervencije iz domena male oralne hrurgije i endodontski zahvati sa forsiranjem apeksa najčešće stomatološke procedure umešane u nastanak SBE.

Kardijalni uslovi vezani za SBE

U proceni strukturne bolesti srca koja je dobra predispozicija za nastanak SBE važna je ne samo vrsta bolesti, već i njena težina, kao i prateći morbiditet i mortalitet. Upravo zbog toga se srčana oboljenja dele na: visoko rizična, umereno rizična i neznatno rizična, a pre svega na osnovu potencijalne prognoze bolesnika ako se endokarditis dogodi.⁷

Kategorija visokog rizika – preporučena profilaksa

1. Veštački srčani zalisti
2. Prethodno preležani endokarditis
3. Kompleksno cijanotične kongenitalne srčane mane
4. Hirurški konstruisano sistemsко plućno srce

Kategorija umerenog rizika – preporučena profilaksa

1. Većina ostalih urođenih srčanih nedostataka

inobstructedly get into the blood being thus disseminated all over the human body.¹ Activating reticuloendothelial system, microorganisms are very quickly and completely eliminated. TB is supposed to last around 15 minutes.² With the largest number of patients TB is gone without any complications. However, in case that there are so-called weak points (damages and changes on the heart endocardium) in the host tissue, microorganisms can settle down there and commence their growth and breeding, which creates favourable conditions for generation of subacute bacterial endocarditis (SBE), which, prior to the discovery of antibiotics, was a high lethal disease.^{3,4} SBE occurs on a terrain of structurally changed valve and is usually caused by a less virulent bacterium upon bacteremia from distant spots such as gums, gastrointestinal or genitourinary system.

Even today SBE is accompanied by high morbidity and mortality in spite of the improved prognosis due to the advance in antimicrobial therapy.⁵ It is exactly because of this that primary prevention from SBE is very important.

Martin et al.⁶ think that dental interventions in the domain of small oral surgery and endodontic interventions forcing apex are the most frequent dental procedures causing SBE.

Cardiac conditions related to SBE

In assessing structural heart diseases, which is a good predisposition for occurrence of SBE, of importance are not only the type of disease, but its seriousness too, as well as accompanying morbidity and mortality. It is exactly because of that that the heart diseases are divided into: high risk, moderate risk and insignificantly risk ones and first of all on the basis of potential prognosis of patients if there occurs endocarditis.⁷

High-risk category – prophylaxis recommended

1. Prosthetic cardiac valve
2. Previous bacterial endocarditis
3. Complex cyanotic congenital heart disease
4. Surgically constructed systemic pulmonary heart

Moderate-risk category – prophylaxis recommended

1. Most other congenital malformations
2. Acquired valvar dysfunction

2. Sve stečene disfunkcije zalistaka
3. Hipertrofična kardiomiopatija
4. Prolaps mitralnog zalistka sa vavularnom regurgitacijom

Kategorija neznatnog rizika – profilaksa se ne preporučuje

1. Izolovani defekt sekundarnog pretkomornog atrijalnog septuma
2. Hirurški korigovan atrijalni i ventrikularni septalni defekt i patent ductus arteriosusa
3. Prethodna koronarna arterijska by-pass hirurgija
4. Prolaps mitralnog zalistka bez regurgitacije
5. Fiziološki, funkcionalan ili bezazlen šum na srcu
6. Prethodna reumatska grozica bez disfunkcije zalistaka
7. Prethodna Kawasaki bolest bez valvularne disfunkcije
8. Srčani pejsmejkeri (intravaskularni i epi-kardijalni), kao i implantirani defibrilatori

Stomatološki uslovi vezani za SBE

Određene stomatološke procedure izazivaju snažnu TB, koja može kod rizičnih bolesnika da prouzrokuje SBE. Iz tih razloga je neophodno da se ovi pacijenti pre intervencije adekvatno zaštite.^{2,7} Međutim, veliki broj stomatoloških zahvata ne izaziva TB dovoljnog intenziteta da bi predisponirali nastanak SBE i u tim slučajevima nije potrebna antibiotska profilaksa.

Stomatološke intervencije kod kojih se preporučuje profilaksa SBE

1. Sve oralnohirurške intervencije
2. Ugradnja dentalnih implantanata
3. Intraperiodontalne lokalne anestetičke injekcije
4. Periodontalne procedure (uklanjanje zubnog kamenca i konkremenata)
5. Periodontalne hirurške intervencije
6. Periapikalne endodontske intervencije
7. Subgingivalno brušenje zuba
8. Dentalna profilaksa kada se očekuje kravljenje (uklanjanje inflamirane hipertrofične papile)

Stomatološke intervencije kod kojih se NE preporučuje profilaksa SBE

1. Rutinske lokalne anestetičke injekcije
2. Skidanje hirurških šavova

3. Hypertropic cardiomyopathy
4. Mitral valve prolapse with valvar regurgitation

Negligible-risk category – prophylaxis not recommended

1. Isolated secundum atrial septal defect
2. Surgical repair of atrial septal defect and patient ductus arteriosus
3. Coronary artery bypass graft
4. Mitral valve prolapse without regurgitation
5. Physiologic, functional, or innocent heart murmur
6. Previous rheumatic fever without valvar dysfunction
7. Previous Kawasaki disease without valvar dysfunction
8. Heart pacemaker (intravascular and epicardial) as implanted defibrillators.

Dental conditions related to SBE

Certain dental interventions cause strong TB, which may cause SBE with risky patients. For these reasons, it is necessary to adequately protect these patients prior to an intervention^{2,7}. However, a large number of dental interventions do not cause TB of sufficient intensity to predispose generation of SBE so that antibiotic prophylaxis is not necessary in those cases.

Dental procedures in which prophylaxis is recommended

1. Oral surgical procedures
2. Dental implant placement
3. Intraligamentary local anesthetic injection
4. Periodontal procedures (dental calculus and subgingival calculus removal)
5. Periodontal surgical procedures
6. Periapical endodontic procedures
7. Subgingival teeth polishing.
8. Dental prophylaxis with bleeding (chronically inflamed papilla removal)

Dental procedures in which prophylaxis is not recommended

1. Routine local anesthetic injection
2. Suture removal

3. Restorativna stomatologija
4. Intrakanalna endodontska terapija
5. Uklanjanje mekih naslaga i supragingivalno čišćenje zuba
6. Postavljanje i podešavanje protetskih i ortodontskih nadoknada
7. Uzimanje otisaka

3. Restorative dentistry
4. Intracanal endodontic therapy
5. Removal of soft deposits and supragingival teeth cleaning
6. Placement of removable prosthetic and orthodontic appliances
7. Making impressions

Antibotska profilaksa SBE

Sama profilaksa je najefikasnija ako se antibiotik da perioperativno u dozi koja je dovoljna da obezbedi adekvatnu antibotsku koncentraciju u serumu za vreme trajanja TB da bi se smanjila mogućnost nastanka bakterijske rezistencije.⁸ Ukoliko postoji odloženo zarastanje rane ili sama procedura uključuje već inficirano tkivo, neophodno je obezbediti dodatne doze antibiotika za već prisutnu infekciju.

Antibiotic prophylaxis of SBE

The very prophylaxis is the most efficient if an antibiotic is preoperatively administered in a dosage sufficient to provide adequate antibiotic concentration in a serum during TB to prevent the possibility of the bacterial resistance occurrence.⁸ Should there be a delayed healing of the wound or if the very procedure includes the already infected tissue, it is necessary to provide additional dosages of antibiotics for the already existing infection.

Antibotski režim za profilaksu SBE (AHA) / Antibiotic regimen for prophylaxis of SBE (AHA)

Situacija – Situation	Agens – Antibiotic	Preporuka – Regimen
Standardna profilaksa Standard propxilaxis	Amoxicillin	Odrasli: 2g oralno 1 sat pre intervencije Adults: 2 g orally 1 hr pre-op Deca: 50mg/kg oralno 1 sat pre int. Children: 50 mg/kg orally 1 hr pre-op
Nemoguće oralno uzimanje Unable to take oral medication	Ampicillin	Odrasli: 2g im. ili iv. 30 min. pre int. Adults: 2 g im. or iv. within 30 min before procedure Deca: 50 mg/kg im. ili iv. 30 min. pre int Children: 30 mg/kg im. or iv. within 30 min before procedure
Alergija na penicilin Penicillin allergic	Clindamycin	Odrasli: 600mg oralno 1 sat pre int. Adults: 600 mg orally 1 hr pre-op Deca: 20mg/kg oralno 1 sat pre int. Children: 20 mg/kg orally 1 hr pre-op
	Cephalexin ili Cefadroxil	Odrasli: 2g oralno 1 sat pre intervencije Adults: 2 g orally 1 hr pre-op Deca: 50mg/kg 1 oralno sat pre int. Children: 50 mg/kg orally 1 hr pre-op
	Azithromycin ili Clarithromycin	Odrasli: 500mg oralno 1 sat pre int. Adults: 500 mg orally 1 hr pre-op Deca: 15mg/kg oralno 1 sat pre int. Children: 15 mg orally 1 hr pre-op
Alergija na penicilin nemoguće oralno uzimanje Unable to take oral medication and penicillin allergic	Clindamycin	Odrasli: 600mg im. ili iv. 30 min. pre int. Adults: 600 mg im. or iv. within 30 min before procedure Deca: 20mg/kg im. ili iv. 30 min. pre int. Children: 20 mg/kg im. or iv. within 30 min before procedure
	Cefazolin	Odrasli: 1 g IM ili IV 30 min. pre int. Adults: 1 g im. or iv. within 30 min before procedure Deca: 25 mg/kg im. ili iv. 30 min. pre int. Children: 25 mg/kg im. or iv. within 30 min before procedure

Najčešći uzročnik SBE je, gotovo isključivo, alfa hemolitični streptokok (*streptococcus viridans*) pa i sama profilaksa treba da bude upravljena prema ovom mikroorganizmu.⁹ Američko udruženje za srčana oboljenja (AHA) dalo je formalne preporuke za prevenciju SBE⁷. Smatra se da je amoksicilin lek izbora, pošto ga gastrointestinalni trakt bolje apsorbuje i obezbećuje viši i produženi nivo koncentracije u serumu.⁹ Ukoliko je bolesnik već na antibiotskoj terapiji u trenutku kada se javio stomatologu i ukoliko se taj antibiotik normalno koristi u prevenciji SBE preporučuje se uimanje antibiotika iz druge klase pre nego povećanje doze već primenjivanog antibiotika.⁷

Treba znati da i pored dobro sprovedene profilakse može doći do pojave SBE pa lekar i stomatolog moraju ozbiljno uzeti u obzir svaki neuobičajeni klinički znak, kao: neobjašnjena groznica, noćno znojenje, slabost, mijalgija, artralgija, letargija i nelagodnost.¹⁰

Svaki stomatolog je dužan da bude detaljno upoznat sa formalnom preporukom AHA i spreman da istu, u određenoj situaciji, primeni ukoliko postoje kardijalni i stomatološki uslovi vezani za SBE.

The most frequent cause of SBE, almost exclusively, is alpha hemolytic streptococcus (*streptococcus viridans*), so that the very prophylaxis should be directed towards this microorganism.⁹ The American Heart Association has presented formal recommendations for prevention from SBE.⁷ Amoxicillin is considered a medicine of choice, because it is better absorbed by the gastrointestinal tract providing higher and extended level of concentration in the serum.⁹ If the patient is already undergoing an antibiotic therapy at the moment of visiting a dentist and if that antibiotic is normally used in the prevention from SBE, administration of an antibiotic from another class is recommended rather than increase in the dosage of the already applied antibiotic.⁷

One should know that, in addition to a well carried out prophylaxis, SBE can occur so that a physician or dentist must seriously take into account any unusual clinical sign such as: inexplicable fever, night sweating, weakness, myalgia, lethargy and uneasiness.¹⁰

Every dentist shall be obliged to be fully acquainted with the formal recommendations of the American Heart Association and be ready, at a given situation, to apply the same should there be cardiac and dental conditions related to SBE.

TB i stomatološke intervencije

Incidenca i veličina TB je direktno proporcionalna stepenu oralne inflamacije i infekcije, što znači da je prilikom stomatološke intervencije rizik za nastanak SBE svakako manji na terenu zdrave usne duplje nego na terenu tekuće oralne inflamacije. Zbog toga sve osobe koje su na povećanom riziku za razvoj SBE moraju da imaju sadržajan **stomatološki profilaktički program** koji obuhvata: obuku u sprovođenju oralne higijene, periodičnu stomatološku negu i specijalnu stomatološku negu.

1. Oralna higijena – pacijentima treba objasniti da je pravilno održavanje oralne higijene najbolji mogući način za redukciju potencijalnog izvora bakterijskog raseljavanja. Optimalno oralno zdravlje se održava kroz redovnu profesionalnu brigu i primenu odgovarajućih dentalnih produkata kao što su: ručno ili električno pranje zuba, konac, trake i čačkalice za čišćenje zuba, kao i drugih mogućnosti za uklanjanje plaka.

TB and dental interventions

Incidence and size of TB are directly proportional to the degree of oral inflammation and infection, which means that the risk of SBE generation during a dental intervention is probably less on the terrain of healthy oral cavity than on the terrain of the current oral inflammation. Because of that all persons susceptible to the increased risk for SBE development must have sizable dental prophylactic programme encompassing: training in practicing oral hygiene, periodical dental care and special dental care.

1. Oral hygiene – patients should be instructed that proper practicing oral hygiene is the best possible way to reduce potential source of bacterial dissemination. Optimum oral health is maintained through regular professional care and use of adequate dental products such as: manual or electric teeth cleaning, thread, tape and toothpick for teeth cleaning as well as other possibilities to remove plaque.

2. Periodična stomatološka nega – odnosi se na česte kontrolne preglede, redovno uklanjanje naslaga sa zuba (mehaničko i ultrazvučno) i korekciju jatrogenih faktora (neadekvatne plo-mbe, neadekvatno urađeni fiksni i mobilnih protetski radovi i ortodontski aparati).

3. Specijalna stomatološka nega – podrazumeva sanaciju svih početnih dentalnih i parodontalnih oboljenja, blagovremeno sprovođenje oralnohirurških zahvata i ekstrakcije zuba i izradu novih fiksnih i mobilnih protetskih radova i ortodontskih pomagala.

Ukoliko se sprovodi neka oralnohirurška intervencija stomatolog je dužan da učini sve kako bi smanjio mogućnost nastanka TB. To podrazumeva ograničenje obima hirurške procedure na 2 ili 3 dolaska, a ne na istovremeno sprovođenje cele procedure². Ukoliko je npr. indikovano vađenje 10 zuba, stomatolog u jednoj poseti treba da izvadi 3 do 4 zuba pri svakom od 3 dolaska.

Rizik za nastanak SBE je svakako manji na terenu zdrave usne duplje nego na terenu tekuće oralne inflamacije.¹¹ Oralni antiseptici primenjeni neposredno pre dentalne procedure mogu redukovati učestalost i težinu TB. Ovi agensi uključuju hlorheksidin hidrochlorid i povidon jodid.¹² Svim visokorizičnim bolesnicima se može dati 15 ml hlorheksidina putem nežnog oralnog rasprskavanja ili ispiranja oko 30 sekundi pre dentalnog tretmana što može smanjiti rizik od TB.¹² Učestala primena ovih sredstava se ne preporučuje zbog mogućnosti selekcije rezistentnih mikroorganizama.

Ukoliko je potrebna serija stomatoloških tretmana koja zahteva antibiotsku profilaksu neophodno je da se pojedine procedure planiraju u takvim vremenskim intervalima da se dozvoli oporavak normalne bakterijske flore i da se redukuje opasnost za nastanak rezistentnih sojeva. Smatra se da je za to sasvim dovoljan period od 9 do 14 dana.² Ako je potrebno predlaže se i kombinacija antibiotskih procedura u okviru istog profilaktičkog perioda.

Povremeno se za vreme stomatološkog tretmana, koji nije zahtevao prethodnu antibiotsku profilaksu može javiti neočekivano krvavljenje, a samim tim i TB. U ovoj situaciji je potrebno da se kod svakog rizičnog pacijenta odmah primeni odgovarajuća antibiotska profilaksa, a najkraće u roku od dva sata.¹³ Profilaksa data u vremenskom periodu dužem od četiri sata posle TB neće dati profilaktičku korist.¹³

2. Periodical dental care – refers to frequent control check-ups, regular removing deposits on the teeth (mechanical and ultrasonic) and correction of iatrogenic factors (inadequate filling, inadequately made fix and mobile dentures and orthodontic apparatuses).

3. Special dental care – means healing of all initial dental and periodontal diseases, timely performance of oral-surgical interventions, and extraction of teeth and making of new fix and mobile dentures and orthodontic aids.

If any oral-surgical intervention is being carried out a dentist shall be obliged to do everything to reduce the possibility of TB generation. It means that volume of surgical procedure should be restricted to 2 or 3 visits, but not simultaneous carrying out the whole procedure.² For example, if extraction of 10 teeth is indicated, the dentist should extract 3 to 4 teeth each time out of 3 visits.

SBE generation risk is probably lower on the terrain of the healthy oral cavity than on the terrain of a current oral inflammation.¹¹ Oral antiseptics applied immediately prior to a dental procedure may reduce frequency and severity of TB. These agents include chlorhexidine and povidone iodine.¹² 15 ml of chlorhexidine may be administered to all high risk patients by means of mild oral spraying or rinsing around 30 seconds prior to the dental treatment, which may reduce risk from TB.¹² Repeated application of these agents shall not be recommended because of the possibility of selection of resistant microorganisms.

In case a series of dental treatments shall be necessary requesting antibiotic prophylaxis, it is indispensable to plan certain procedures over such time intervals to allow recovery of a normal bacterial flora and to reduce danger of resistant varieties generation. A period from 9 to 14 days is considered to be well enough for this.² If necessary, combination of antibiotic procedures within the same prophylactic period shall also be recommended.

Unexpected bleeding and hence TB itself may occur periodically during a dental treatment, which did not require previous antibiotic prophylaxis. In this situation, it is necessary to immediately apply adequate antibiotic prophylaxis with each risky patient, and in the shortest possible time, that is, within two hours.¹³ Prophylaxis administered over the time period longer than 4 hours upon TB will not provide prophylactic advantage.¹³

Na Odeljenju za oralnu hirurgiju Klinike za stomatologiju Medicinskog fakulteta u Nišu ukupno je u 2004. god. obrađeno 27 bolesnika koji su bili svrstani u rizične za pojavu SBE. Devetnaest bolesnika je pripadalo grupi visokog rizika, tj. imalo je ugrađene veštačke srčane zaliske, dok je ostalih osam bilo u kategoriji umerenog rizika, tj. šest bolesnika je bilo sa urođenim srčanim nedostacima, a dva su imala stečene disfunkcije srčanih zalistaka nastalih kao posledica preležane reumatske groznice. Kod svih pacijenata je bila indikovana ekstrakcija zuba i primenjen je antibiotski protokol za prevenciju SBE. U šesnaest bolesnika ordiniran je oralno amoksicilin, kod sedam je takođe oralno primenjen klindamicin, dok je kod ostalih četiri bolesnika intramuskularno ordiniran ampicilin (dva bolesnika), odnosno klindamicin (dva bolesnika). Kako se radilo o nekomplikovanom vađenju zuba nije bilo potrebe za primenom dodatnih antibiotika u postoperativnom periodu. Tri bolesnika su pre ekstrakcije zuba već bila na antibiotskoj terapiji, međutim ta terapija nije odgovarala profilaktičkom režimu za SBE tako da je kod svih izvršena prevencija bolesti primenom novog antibiotika iz protokola. Treba napomenuti, da su svi bolesnici sa ugrađenim veštačkim srčanim zalicima a koji su ujedno bili i najbrojniji bili dvostruko rizični. Prvi rizik, odnosio se na mogući nastanak SBE zbog čega su bili izloženi antibiotskom profilaktičkom programu. Drugi rizik, odnosio se na moguće postekstrakciono krvavljenje zbog oralne antikoagulantne terapije na kojoj su se nalazili, tako da su svi bili podvrgnuti i transfuziološkoj pripremi. U svim slučajevima ekstrakcija zuba i postekstrakcioni period prošli su bez ikakvih komplikacija.

Smatramo da se pred svaku krvavu stomatološku proceduru, koja može prouzrokovati dovoljno jaku TB za nastanak SBE, treba obratiti velika pažnja na anamnezu i medicinsku dokumentaciju koju bolesnik posede, kako se ne bi dogodilo da se bolesnik ne podvrgne obaveznom antibiotskom profilaktičkom programu što bi moglo da ga vitalno ugrozi. Naime, smatra se da ukoliko se SBE razvije u roku od petnaest dana nakon krvave stomatološke intervencije, pri kojoj nije bio primenjen antibiotski profilaktički program, da je isti u bliskoj uzročno-posledičnoj vezi sa samom stomatološkom procedurom. Međutim, mora se imati u vidu, da SBE može nastati i u miru, tj. pri banalnom

In 2004, 27 patients in total were processed at the Department for Oral Surgery of the Dental Clinic of the Faculty of Medicine in Niš, who were classified as risky for SBE. Belonging to the group of high risk were 12 patients, that is, they had artificial heart valves built-in, while the rest 8 were classified with a category of moderate risk, that is, 6 patients had congenital heart defects, and 2 had acquired dysfunctions of heart valves as a result of rheumatic fever wiped out. Extraction of teeth was indicated with all the patients and antibiotic protocol was applied to prevent SBE. Amoxicillin was orally practiced with 16 patients, clindamycin was also orally applied with 7 patients, while with the rest 4 patients ampicillin was intramuscularly practiced (2 patients), that is, clindamycin (2 patients). Since uncomplicated extraction of teeth was in question, there was no need to apply additional antibiotics in the postoperative period. Three patients were already under the antibiotic therapy prior to the teeth extraction, however, that therapy was inadequate for the prophylactic regime for SBE, so that prevention from disease was done with all of them using a new antibiotic from the protocol. A mention should be made here that all the patients with the artificial heart valves built-in, who, at the same time, were the most numerous, were double risky. The first risk referred to the possible SBE generation because of which they were subjected to the antibiotic prophylactic programme. The second risk referred to the possible post extraction bleeding due to the oral anticoagulant therapy they were subjected to, so that all of them were subjected to transfusive preparation. In all cases, extraction of teeth and post extraction period did not show any complications.

We think that, prior to any bloody dental procedure that could cause sufficient TB for SBE generation, extensive attention should be given to anamnesis and medical documentation possessed by the patient to avoid a situation that the patient would not be subjected to an obligatory antibiotic prophylactic programme, which could vitally jeopardize him. Namely, SBE, if developed within 15 days upon the bloody dental intervention on which occasion no antibiotic prophylactic programme was applied, is considered to be in a cause-and-effect relation with the very dental procedure. However, it must be kept in mind that SBE may also be generated at any moment, that is, during everyday teeth cleaning,

pranju zuba, naravno ako je prisutno intenzivno krvavljenje koje je posledica npr. terminalnog stadijuma parodontopatije, zbog čega se, isto tako, velika pažnja mora posvetiti i stomatološkom profilaktičkom programu.

Zablude

Na kraju, umesto zaključka, potrebno je ukažati na neke zablude koje vladaju o dentalno indukovanim nastanku SBE. Prva – da stomatolozi u svim praktičnim situacijama treba da se ponašaju po preporukama Američkog udruženja kardiologa, druga – da su mnogi SBE oralnog porekla stvarano posledica stomatoloških intervencija, treća – da antibiotska prevencija daje sigurnu zaštitu od SBE, kao i da se antibiotici moraju da aplikuju pre svake stomatološke intervencije sa krvavljenjem, četvrta – velika je greška u razmišljanju da ako bolesnik već prima antibiotsku terapiju, da je ta terapija dovoljna i za prevenciju SBE, peta – da je rizik od SBE skoro uvek veći od toksičnog efekta antibiotika i šesta – da su parenteralni antibiotici preporučljiviji od oralnih za bolesnike koji su na visokom riziku za razvoj SBE.

naturally if intensive bleeding occurs, which is a consequence of, for example, terminal stage of periodontopathy because of which extreme care should be paid to the dental prophylactic programme as well.

Mistakes

Finally, instead of a conclusion, it is necessary to point to some mistakes governing on dentally-induced generation of SBE. First – dentists should in all practical situations behave in keeping with the recommendations of the American Heart Association. Second – many SBEs of oral origin are really a consequence of dental interventions. Third – antibiotic prevention provides safe protection against SBE as well as that antibiotics must be applied prior to any dental intervention accompanied by bleeding. Fourth – it is a great thinking error that if a patient is already under an antibiotic therapy that the therapy itself is also sufficient for prevention from SBE. Fifth – that a risk to SBE is almost always higher than the toxic effect of the antibiotic. Sixth – that parenteral antibiotics are more recommendable than those oral for patients who are at a high-risk level for development of SBE.

LITERATURA/REFERENCES

1. Drangsholt MT. A new causal model of dental diseases associated with endocarditis. Ann Periodontol 1998; 1: 184–196.
2. Peterson LJ. Principles of management and prevention of odontogenic infections. In: Peterson JL.(ed.): Oral and Maxillofacial Surgery. Third edition, Mosby Company, St. Louis-Toronto-London-Milan -Tokyo-Sidney; 1998: 392–417.
3. Ocabe K. Factors affecting the occurrence of bacteriemia associated with tooth extraction. Int J Oral Maxillofac Surg 1995; 3: 239–242.
4. Smith AJ. The dental status and attitudes of patients at risk from infective endocarditis. Br Dent J 1993; 2: 59–64.
5. Karchmer AW. Infective endocarditis. In: Braunwald heart disease. Saunders, 1997: 1077–1105.
6. Martin MV, Butterworth ML, Longman LP. Infective endocarditis and the dental practitioner: a review of 53 cases involving ligation. Br Dent J 1997; 182(12):465–468.
7. Dajani AS, Taubert KA, Wilson W et al. Prevention of bacterial endocarditis: recommendations by the American Heart Association. JAMA 1997; 22: 1794–1801.
8. Seymour RA, Lowry R, Whitworth JM, Martin MV. Infective endocarditis, dentistri and antibiotic prophylaxis; time for a rethink? Br Dental J 2000; 189 (11): 610–616.
9. Dajani AS, Bawdon RE, Berry MC. Oral amoxicillin as prophylaxis for endocarditis: what is the optimal dose? Clin Infect Dis 1994; 18(2): 157–160.
10. Buckingham JK, Gould IM, Tervitt G, Williams S. Prevention of endocarditis: communication between doctors and dentist. Br Dent J 1992 172(11): 414–415.
11. Fine DH., Korik I., Fungang D., et al. Assessing pre-procedural subgingival irrigation and rinsing with an anti-septic mouthrinse to reduce bacteremia. J Am Dent Assoc 1996; 127(5): 641–646.
12. Rahn R, Schneider S, Diehl O, Schafer V, Shah PM. Preventing post-treatment bacteriemia: comparing topical povidone-iodine and chlorhexidine. J Am Dent Assoc 1995; 126(8): 1145–1149.
13. Wahl MJ. Myths of dental-induced endocarditis. Arch Intern Med 1994; 154(2): 137–144.

Adresa za korespondenciju:

Doc. dr Goran Jovanović
Bulevar Nemanjića 61/9
18000 Niš
Srbija i Crna Gora
Tel.: + 381 (0) 18 232295

Address for correspondence:

Ass. Prof. Goran Jovanovic D.D.S., MSD, Ph. D.
Bulevar Nemanjica 61/9
18000 Niš
Serbia and Montenegro
Phone: +381(0) 18 232295