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Comparison of two adjunctive systemic antibiotic regimens to initial therapy for periodontitis patients

Submission date
24/03/2019

Recruitment status
No longer recruiting

Registration date
31/03/2019

Overall study status
Completed

Last Edited
12/12/2019

Condition category
Oral Health

[_] Prospectively registered
[_] Protocol
[_] Statistical analysis plan
[X] Results
[_] Individual participant data

Plain English summary of protocol

Background and study aims
Periodontitis is inflammation of the gums and supporting structures of the teeth. The aim of this study is to test the effects of periodontal treatment combined with two antibiotics (3-day or 7-day course) in patients with chronic periodontitis.

Who can participate?
Patients aged over 25 with chronic periodontitis

What does the study involve?
Participants are randomly allocated to one of three groups. All participants undergo non-surgical periodontal treatment. The first group receive antibiotics for 3 days, the second group receive antibiotics for 7 days, and the third group receive placebo (dummy) capsules. All groups are assessed at the start of the study and after three months.

What are the possible benefits and risks of participating?
Patients who undergo non-surgical periodontal treatment combined with antibiotics may benefit from improved symptoms and reduction of further loss of tooth attachment. Participation in the study involves no risk.

Where is the study run from?
Victor Babes University of Medicine and Pharmacy Timișoara (Romania)

When is the study starting and how long is it expected to run for?
July 2017 to December 2018

Who is funding the study?
Victor Babes University of Medicine and Pharmacy Timișoara (Romania)

Who is the main contact?
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Contact information

Type(s)
Scientific

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Additional identifiers

Protocol serial number
3/2017

Study information

Scientific Title
Clinical, microbiological and oxidative stress evaluation of periodontitis patients treated with two regimens of systemic antibiotics, adjunctive to non-surgical therapy. A placebo-controlled randomized clinical trial

Acronym
OXY-ANTIBIO-PERIO

Study objectives
This study investigates if the clinical, microbiological and biochemical outcomes in patients with chronic periodontitis that underwent non-surgical periodontal therapy combined with adjunctive systemically administration of amoxicillin and metronidazole are similar after regimens of 3 or 7 days of antibiotic administration, respectively.

Ethics approval required
Old ethics approval format

Ethics approval(s)

Approved 07/05/2018, Research Ethics Committee of the Victor Babeş University of Medicine and Pharmacy Timişoara (Piata Eftimie Murgu 2A, 300041 Timisoara, Romania (EU); Tel +40 (0) 256 466001, Email: esanda2000@yahoo.com), Approval No. 06/07.05.2018

Primary study design
Interventional

Study design
Prospective placebo-controlled triple-blinded randomized clinical trial

Study type(s)
Treatment

Health condition(s) or problem(s) studied
Chronic periodontitis

Interventions
All patients were investigated clinically and radiographically at baseline (before therapy). The following clinical parameters were assessed: periodontal pocket depth (PPD), clinical attachment level (CAL), full mouth bleeding score (FMBS), and full-mouth plaque score (FMPS). The evaluation of the periodontal parameters was recorded in the periodontal chart (http://www.periodontalchart-online.com/uk/), saved in a .pdf format, printed and attached to each patient's observation file, at baseline and at the three months reevaluation by measuring the PPD and the CAL at six sites per tooth (mesio-buccal, buccal, disto-buccal, disto-lingual, lingual and mesio-lingual) at all teeth, excluding third molars, to the nearest millimeter, with a periodontal probe (PCPUNC 15, Hu-Friedy, Chicago, IL, USA), using the cement–enamel junction (CEJ) as a reference point for the CAL. When CEJ was missing (prosthodontic restoration), measurements was made using as reference point the most apically located margin of the restoration. Tooth mobility was recorded based on the Miller classification (Miller 1985), and the furcation involvement (FI) was classified according to Hamp et al. 1975, using a Nabers probe #2N hdl #7, markings: 3-6-9-12mm, (Hu-Friedy®, Chicago, IL, USA).

After the measurements, all pockets with PPD≥4 mm were scaled and root planed under local anesthesia by the same clinician (SB) with Gracey curettes (Hu-Friedy®, Chicago, IL, USA) and ultrasonic instruments (Piezon®250, Electro Medical Systems SA, Nyon, Switzerland), following the protocol of One-Stage-Full-Mouth-Disinfection (OSFMD, Quirynen et al. 1995). As home care, patients were advised to rinse twice daily for 2 min. with a 0.2% Chlorhexidine digluconate solution (Dentaton, Ghimas S.p.A., Casalecchio di Reno, Bologna, Italy) for 14 days.

At the end of the non-surgical therapy session, one investigator (the randomizer, SIS) allocated each patient to one of the three treatment groups using a number generator (www.random.org). Every position on the randomization list corresponded to a medication package number related to a pre-packed medication bag, which contained the instructions for intake as well. The medication bags were handed to each patient.

In group A (control), patients were treated only with non-surgical periodontal treatment and received a placebo treatment for 7 days (N = 14). In group B (test), patients were treated with non-surgical periodontal treatment combined with systemic administration of amoxicillin and metronidazole (SRP + AMX + MET), 500 mg three times daily (TID) for 3 days and placebo for 4 days (N = 16). In group C (test) patients were treated with non-surgical periodontal treatment combined with SRP + AMX + MET, 500 mg TID, 7 days (N = 16).

Each medication bag contained four identical vials, each one with tasteless and identical type of capsules. Each vial was numbered, and each patient was instructed to take one capsule from each vial every 8 hours, as follows: from vial No. 1 and 2 in the first 3 days after SRP and from vial No. 3 and 4 in the following 4 days.

The placebo group (group A) had only placebo capsules in all vials. Group B had AMX and MET in vials No. 1 and 2, and placebo in vials No. 3 and 4. Group C had AMX and MET in all four vials. The medication bags were prepared in the Department of Periodontology of the Faculty of Dental Medicine. A recall appointment to ask the patient about any adverse reactions or any breach of inclusion criteria was scheduled at 2 weeks after the beginning of the medication intake.

Intervention Type
Procedure/Surgery

Primary outcome(s)
Periodontal pocket depth measured with a periodontal probe (PCPUNC 15, Hu-Friedy, Chicago, IL, USA) at baseline (initial evaluation) and after three months

Key secondary outcome(s)
Measured at baseline (initial evaluation) and after three months:
1. Clinical attachment level measured at six sites per tooth (mesio-buccal, buccal, disto-buccal, disto-lingual, lingual and mesio-lingual) at all teeth, excluding third molars, to the nearest millimeter with a periodontal probe (PCPUNC 15, Hu-Friedy, Chicago, IL, USA), using the cement–enamel junction as a reference point for the clinical attachment level.
2. Plaque assessed with the full-mouth plaque score (FMPS)
3. Bleeding assessed with the full-mouth bleeding score (FMBS)
4. Number of sites with PPD ≥6 mm (considered deep periodontal pockets) measured with a periodontal probe (PCPUNC 15, Hu-Friedy, Chicago, IL, USA)
5. Microbiological parameters evaluated through polymerase chain reaction (PCR) testing using the commercial micro-Ident® kit (Hain Lifescience GmbH, Nehren, Germany) and microbial resistance using the Epsilometer technique (E-test®, AB Biodisk, Solna, Sweden)
6. Biochemical parameters assessed from plasma samples, analyzing the reactive oxygen metabolites and the biological antioxidant potential through photometric methods (Diacron International®, Grosseto, Italy)

Completion date
01/12/2018

Eligibility

Key inclusion criteria
1. Men and women >25 years of age
2. No periodontal therapy or antibiotic intake in the previous 6 months
3. At least 10 natural teeth present in the oral cavity clinically distributed in all four quadrants
4. Bleeding on probing
5. At least 6 teeth with at least one site each with pocket depth (PD) ≥ 5 mm at baseline
6. Clinic and radiographic signs of generalized chronic periodontitis (Armitage 1999)

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Adult

Sex
All

Total final enrolment
46

Key exclusion criteria
1. Pregnancy and/or lactation
2. Any known allergy to antibiotics (amoxicillin, metronidazole)
3. Any systemic conditions that could affect the progression and treatment of periodontal diseases such as Diabetes Mellitus types 1 and 2
4. Medication that could interact with amoxicillin or metronidazole such as coumarin derivates, alcohol derivates, 5-fluor-uracyl/ disulfiram derivates, amprenavir oral solutions, lopinavir /ritonavir oral solution, methotrexate, tetracyclines, oral contraceptives, mebendazole, busulfan, timidazole, vitamin K antagonists, barbiturats, lithium, phenytoin, calcium channel blockers
5. Alcohol abuse

Date of first enrolment
01/10/2017

Date of final enrolment
01/09/2018

Locations

Countries of recruitment
Romania

Study participating centre
Victor Babes University of Medicine and Pharmacy Timişoara
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Sponsor information

Organisation

Victor Babes University of Medicine and Pharmacy Timisoara

ROR
https://ror.org/00afdp487

Funder(s)

Funder type
University/education

Funder Name
Victor Babes University of Medicine and Pharmacy Timisoara Doctoral grant 13901/19.11.2014

Results and Publications

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the study will be stored in a non-publically available repository: archives of the Department of Periodontology of the Victor Babes University. When the data will become available and for how long: 5 years after the end of the study, indefinitely. Comments on data anonymisation: numbers were attributed to patients names.

IPD sharing plan summary
Stored in repository

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	01/12/2019	12/12/2019	Yes	No