

Taking the Samples for Isolation of Markers of Anaerobic Microflora and their Transportation in Case of Rapidly Progressive Periodontitis

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ABSTRACT

Actinobacillus actinomycetecomitans, Porphyromonas gingivalis, Prevotella intermedia, Bacteroides forsythii and Treponema denticola, belonging to anaerobic microflora, are accepted as specific markers at rapidly progressive periodontitis. Their separation and identification are related with various technical problems. Noteworthy, that in the first hours of anaerobes growth, the above-mentioned microorganisms are especially susceptible to oxygen. Even miserable quantity of oxygen has killing effect on microorganisms. The aim of our work was creation of conditions for taking and transport of materials, providing absolute isolation of oxygen and thereby preventing contact of sample and oxygen. Materials for investigation has been taken and placed in Bukhner's vessel by insulin's syringe. Immediately after placing of material vaseline oil was added and like that the sample was delivered to the microbiological laboratory for farther investigations. For microorganisms' differentiation, along with Treponema denticola, the potato bullion was used and for identification - microscopy.

KEYWORDS: *periodontitis, anaerobic microflora, markers, sample taking techniques*

It is well known that rapidly progressive periodontitis belongs to atypical forms of periodont's inflammatory diseases. Among various etiological factors the role of anaerobic microflora is strongly distinguished. That's why, timely revelation and identification of their markers, detection of their sensitivity to medicaments and elaboration of adequate, optimal and a rational schemes individually, for each patient, on the basis of received data are of great value [2].

Nowadays, in most leading dental clinics of the world, detection and identification of markers of anaerobic microflora in both cases - typically proceeding and rapidly progressing periodontitis are adopted and widely used. They are: Actinobacillus actinomycetecomitans, Porphyromonas gingivalis, Prevotella intermedia, Bacteroides forsythii and Treponema denticola [1].

However, it must be mentioned that identification and investigation of markers of anaerobic microflora are related with certain technical problems. Noteworthy, that in the first hours of anaerobes growth, the above-mentioned microorganisms are especially susceptible and sensitive to oxygen. Even miserable quantity of oxygen has killing effect on microorganisms.

Proceeding from the above-mentioned, process of sample taking and transportation requires special measures and creation of anaerobic conditions for normal growth and development of material.

At the department of Preventive Dentistry, Tbilisi State Medical University, all problems concerning clinics, treatment and preventive measures of rapidly progressive periodontitis are in the process of investigation and study.

Thus, the aim of our work was to elaborate the optimal method for taking and transport of materials including the

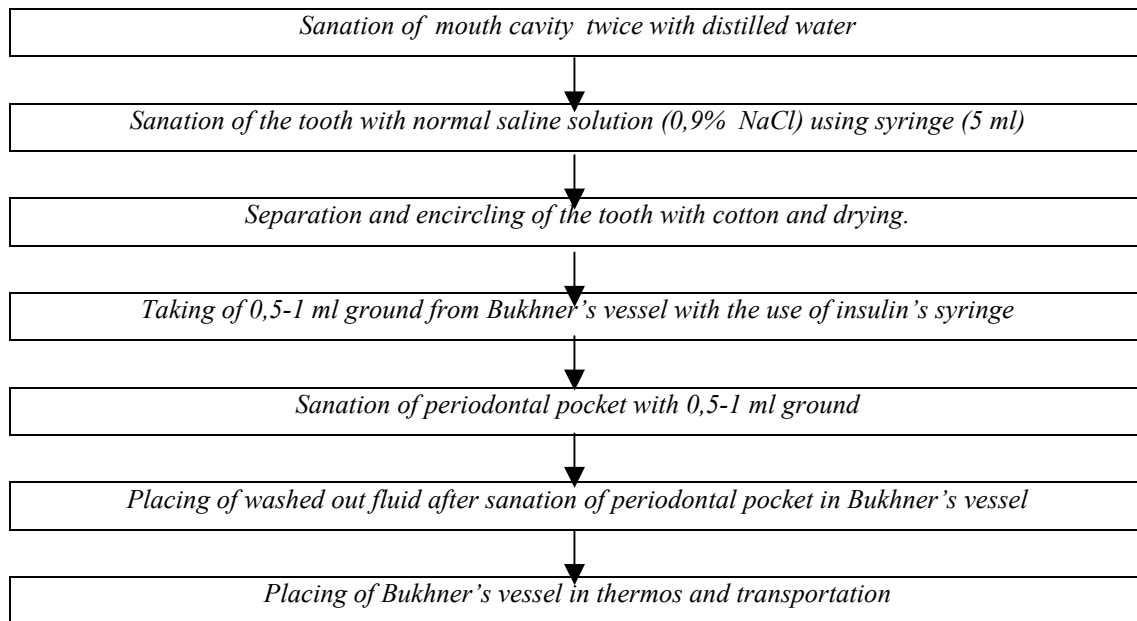
above-mentioned markers. With this purpose, from physical, chemical and biologic factors for anaerobe's separation, the chemical factors were chosen. In accordance with sample's nature various methods were modified

The principle of the method is following: initially sanitation of patient's mouth cavity twice, with distilled water of normal room temperature; sanitation of the tooth with normal saline solution (0,9% NaCl) with the use of syringe (5 ml); separation and encircling of the tooth with cotton and drying.

Material from periodontal pocket for investigation must be taken and transported using the Bukhner's vessel. It is the small size vessel with cotton plug, where 0,5-1 ml potato bullion is placed. Potato bullion is the ground for differentiation of all the above-mentioned anaerobic markers, with the exception of Treponema denticola, which is identified directly using the phase-contrast microscope or Bury's method. Ground is covered with the thin layer of vaseline. This vessel is placed in another larger vessel with pyrogallol 10% NaOH or KOH for creation of anaerobic conditions and rubber plug,

With the use of insulin's syringe, the periodontal pocket is washed out with 0,5-1 ml potato bullion taken from Bukhner's vessel. Using the same insulin's syringe, after sanitation the washed out fluid from periodontal pocket is taken. Insulin's syringe is then placed in small size (0,5 L) thermos. Sample for investigation must be transported and delivered to microbiological laboratory not longer than 3 hours after taking material.

Total of 56 patients have been investigated using the above-described method in TSMU, chair of preventive Dentistry and clinics "Unident-Rossi" and "HBJ-dent".

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Взятие пробы для маркирования анаэробной микрофлоры и ее транспортировка при быстро прогрессирующем пародонтите

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Р Е З Ю М Е

Actinobacillus actinomycetecomitans, Porphyromonas gingivalis, Prevotella intermedia, Bacteroides forsythii и Treponema denticola признаются специфическими маркерами быстро прогрессирующего пародонтита. Их выделение и идентификация связаны с множественными техническими проблемами. Цель исследования – создание оптимальных условий для взятия и транспортировки проб этих микробов с максимальным обеспечением анаэробной среды. Суть разработанного метода состоит в том, что применяются колба Бухнера, инъекционная игла для инсулина и термос небольшого размера; химические реактивы – пирогалловая кислота с добавлением 10% растворов NaOH или KOH. Метод опробован на 56 больных с быстро прогрессирующим пародонтитом и после получения положительных результатов внедрен в практику в стоматологических клиниках Unident-Rossi и HBJ-Dent.

Ключевые слова: пародонтит, анаэробная микрофлора, маркеры, техника взятия проб