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MUSEUM AND CLINICAL STRAINS OF STREPTOCOCCI FOUND IN THE ORAL CAVITY AND THEIR SENSIBILITY TO A VARIETY OF ANTIBIOTICS

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Annotation

Streptococci strains of the anginous group isolated from various oral and maxillofacial infections were screened for their susceptibility to the following antimicrobial agents: benzylpenicillin, ampicillin, oxacillin, cephalothin, ceftazidime, cefotaxime, cefuroxime, erythromycin, clindamycin, tetracycline, chloramphenicol, vancomycin and trimethoprime-sulphamethoxazole. The isolates were susceptible to: clindamycin, chloramphenicol, vancomycin and all beta-lactam antibiotics, except ceftazidime to which 54.5% of the strains showed intermediate susceptibility. Intermediate susceptibility to tetracycline was found in 11.3% of the strains, whereas resistance to the same antibiotic was demonstrated in 61.4%. Resistance to erythromycin and trimethoprime-sulphamethoxazole was of 2.3% for both. In conclusion, penicillin is the drug of choice in infections caused by streptococci of the anginous group.

Key words: *microorganisms, antibiotics, sensitivity to the antibiotic, clinic strain, museum strain.*

Relevance

Streptococci strains of the anginous group isolated from various oral and maxillofacial infections were screened for their susceptibility to the following antimicrobial agents: benzylpenicillin, ampicillin, oxacillin, cephalothin, ceftazidime, cefotaxime, cefuroxime, erythromycin, clindamycin, tetracycline, chloramphenicol, vancomycin and trimethoprime-sulphamethoxazole. The isolates were susceptible to: clindamycin, chloramphenicol, vancomycin and all beta-lactam antibiotics, except ceftazidime to which 54.5% of the strains showed intermediate susceptibility. Intermediate susceptibility to tetracycline was found in 11.3% of the strains, whereas resistance to the same antibiotic was demonstrated in 61.4%. Resistance to erythromycin and trimethoprime-sulphamethoxazole was of 2.3% for both. In conclusion, penicillin is the drug of choice in infections caused by streptococci of the anginous group.

Studying the sensivity of microorganisms to antibacterial drugs is the main goal of clinical doctors and bacteriologists. Sensibility of microorganisms which was obtained from patients to antibacterial drugs plays an important role in the effective treatment and prevention of dental illnesses. The main purpose of our study was to determine the sensibility of museum and clinical strains of microorganisms to a variety of antibiotics , to make a comparison of obtained results . For the study , museum strains of microorganisms were chosen which are stored at the Department of Microbiology of the Tashkent State Dental Institute and clinical strains of Str.pyogens , which were collected from patients , who applied to a bacteriological laboratory of the 3rd clinic of the Tashkent Medical Academy.

Materials and methods of research

For a bacteriological study were 62 patients with a variety of diseases in the oral cavity chosen . The collection of material and seeding on nutritious media which is based on regulations [1, 2] . Seeding of all examined biological material was carried out on the Gold method and was etiologically important in a concentration of more than 103 – 10 4 KOE/ml
Received cultures were identified by morphological , cultural , tinctorial and biochemical features. The sensibility of microorganisms to antibiotics was determined by
Disco-diffusion method
Serial dilution method
The obtained results were assessed using a statistical method.

Received results

Antibiotics sensibility to streptococci was assessed. Antibiotics sensibility , which was withdrawn from clinical strains Str.pyogens is provided in table No.1

Table No.1

Antibiotics sensitivity of clinical strains of streptococci

Antibiotics	**S**		**R**	
	Абс.	**%**	**Абс.**	**%**
Ceftriaxone	6	50,0	6	50,0
Cefepime	8	66,6	4	33,3
Imipenem	9	75,0	3	25,0
Amoxiclav	7	58,3	5	41,5
Sulperasone	10	83,3	2	16,7
Doxycycline	6	50,0	6	50,0
Clindamycin	8	66,6	4	33,3
Azithromycin	5	41,6	4	58,4
Vancomycin	8	66,6	3	33,3
Amikacin	7	58,3	5	41,5
Levofloxacin	9	75,0	2	25,0
Bactazone	10	83,3	2	16,7

When studying the sensibility to antibiotics of clinical strains streptococci using the disk diffusion method , the highest stability was determined to azithromycin (58,4%) ceftriaxone (50%) doxycycline (50%) , but the highest sensitivity was determined to sulperasone and bactazone (83,3%) imipenem (75%) levofloxacin (75%) in table No.1

When determining sensibility to antibiotics of museum strains streptococci were received results , which are provided in table No.2. Sensitivity to AB was revealed from 66% to 100%. Organisms were highly sensible to levofloxacin and bactazone . Next one are AB sulperazon (91,6%) clindamycin (91,6%) , vancomycin , imipenem, doxycycline ,cefepime(each 83,3%). The highest stability of microorganisms was determined to ceftriaxone(33,3%) , amikacin and azithromycin (each 25,0%) and the lowest stability was to levofloxacin and bactazone (0%), clindamycin and sulperazone (each 8,4%).

Table No.2

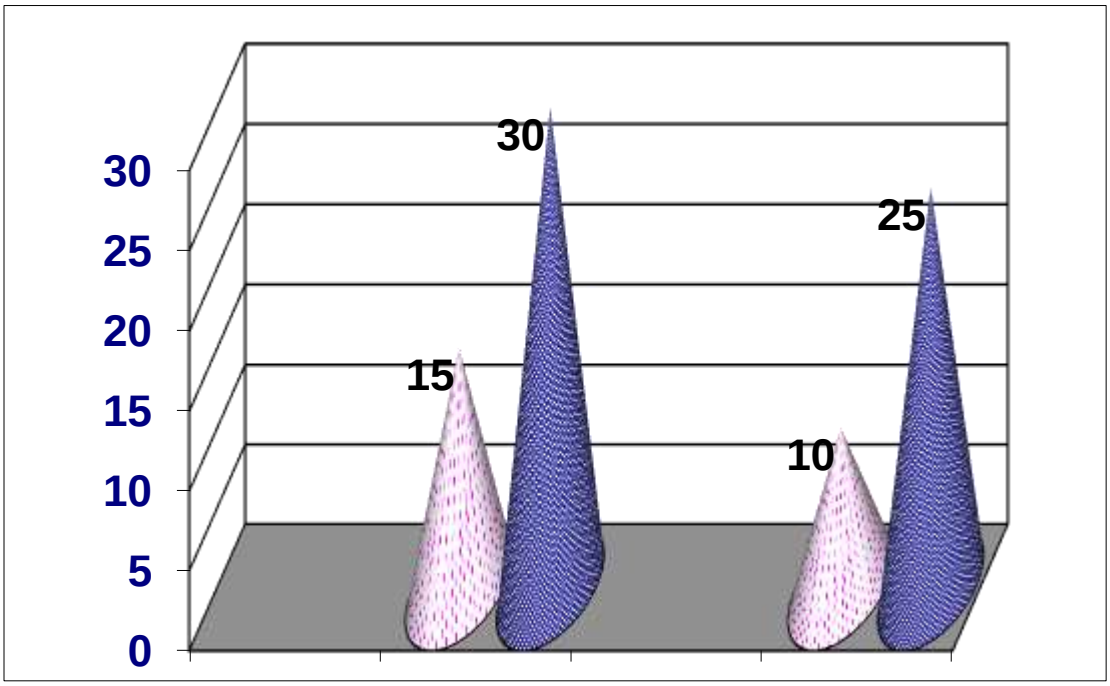
Antibiotics sensibility to museum strains

Antibiotics	**S**		**R**	
	Абс.	**%**	**Абс.**	**%**
Ceftriaxone	8	66,6	4	33,3
Cefepime	10	83,3	2	16,7
Imipenem	10	83,3	2	16,7
Amoxiclav	9	75,0	3	25,0
Sulperazone	11	91,6	1	8,4
Doxycycline	10	83,3	2	16,7
Clindamycin	11	91,6	1	8,4
Azithromycin	9	75,0	3	25,0

Vancomycin	10	83,3	2	16,7
Amikacin	9	75	3	25,0
Levofloxacin	12	100	0	0
Bactazone	12	100	0	0

When studying method of serial dilutions of antibiotics , which had the greatest influence on streptococci (levofloxacin and sulperzon) it was revealed that levofloxacin affects museum strains in a quantity of 10mg/ml and sulperazone 15mg/ml . While to clinial strains levofloxacin and sulperazone , 25mg/ml and 30 mg/ml , relatively. In a comparison to museum strains effective dose of antibiotics for clinical strains turned out to be 2 times higher (figure No.1).

Figure No.1
Minimal concentration of antibiotics (sulperazone and levofloxacine) which impacts effectively on museum and clinical strains of streptococci



When analyz s of clinical and museum strains , the following conclusions were obtained :
First of all , sensibility to antibiotics of clinical strains of microorganisms was assessed: the overall average sensitivity to antibiotics of clinical strains streptococci was 64,5% , while sensitivity of museum strains was 84,0%. Namely , the highest sensibility of museum strains by 1,3 in a comparison to clinical strains.
Thus , the overall average resistance to antibiotics of clinical strains streptococci was 35,5% , at the same time museum strains amounted to 16%.
According to the obtained results , taking into account stability antibiotics of clinical strains streptococci , compared to museum strains , we came to the conclusion that assessing effectiveness of new antibiotics , which are offered in a practical medicine it is highly recommended to use clinical strains of bacteria with museum strains.

SUMMARY:
When determining antibiotic sensitivity museum and clinical strains of microorganisms found that the sensitivity to antibiotics of clinical strains of 1,3 time lover than the museum strains. Recommendations for antibiotics for use in the practice of medicine, as well as the assessment of their effectiveness to use not only the museum but clinical strains of microorganisms.

Literatures:

1. Bergey's Manual of Sistematic Bacteriology.-V.2.The Proteobacteria -Springer. 2nd Ed. - 2005.
2. Review of microbiology and immunology by Warren Levinson 2020
3. Essentials of Medical Microbiology 11 Edition , 2021 Dr. Apurba S Sastry
4. Complete Microbiology for MBBS BAVEJA , C.P.Baveja 7th edition 2021
5. https://cyberleninka.ru/article/n/konstitutsionnye-garantii-prav-grazhdan-na-kvalifitsirovannuyu-meditsinskuyu-pomosch-v-respublike-uzbekistan
6. https://scholar.google.ru/scholar?oi=bibs&cluster=11073371214492045576&btnI=1&hl=ru
7. Otamurotov R. /Psychological characteristics of anxiety in the perception of professional identity in adolescents // carjis. 2022. №Special Issue 1. URL: https://cyberleninka.ru/article/n/o-smirlardagi-kasbiy-o-zligini-anglashidagi-xavotirlanishning-psixologik-xususiyatlari
8. Rakhimova I.I., Safarova E.M. "Bezvozvratnyy shag v nikuda: in a comparative analysis suite. Obsobye sluchai u podrostkov" Vestnik integrative psychologii 2022g. #25. S-214 http://zi-kozlov.ru/magazines/vestnik/1427-vip-25-2022.
9. https://scholar.google.ru/scholar?oi=bibs&cluster=5715885400098347833&btnI=1&hl=ru
10. https://scholar.google.ru/citations?view_op=view_citation&hl=ru&user=Mh_m_cgAAAAJ&citation_for_view=Mh_m_cgAAAAJ:ufrVoPGSRksC
11. https://scholar.google.ru/citations?view_op=view_citation&hl=ru&user=DRq1bqIAAAAJ&citation_for_view=DRq1bqIAAAAJ:qxL8FJ1GzNcC
12. https://scholar.google.ru/citations?view_op=view_citation&hl=ru&user=DRq1bqIAAAAJ&citation_for_view=DRq1bqIAAAAJ:4DMP91E08xMC