



CLINICAL AND DIAGNOSTIC STRUCTURE OF PATIENTS WITH CHRONIC PURULENT OTITIS MEDIA

Esamuratov A.I.

Urgench branch of the Tashkent Medical Academy

✓ Resume

We have studied the results of bacteriological culture of the microbiota of various parts of the middle ear in an adult contingent of patients with chronic suppurative otitis media. The results of the study indicate that in 87% of patients the identified bacteria were highly antibiotic resistant. Conservative therapy of this contingent of patients was carried out with a combination of antibiotics from 2 groups both parenterally and locally, parenterally with an antibiotic from the group of carbapenems and fluoroquinolones as a local therapy.

Keywords: *chronic suppurative otitis media, antibiotic sensitivity, fluoroquinolones, carbapenems*

КЛИНИКО-ДИАГНОСТИЧЕСКАЯ СТРУКТУРА БОЛЬНЫХ ХРОНИЧЕСКИМ ГНОЙНЫМ СРЕДНИМ ОТИТОМ

Эсамуратов А.И.

Ургенчский филиал Ташкентской медицинской академии

✓ Резюме

Нами изучены результаты бактериологического посева микробиоты различных отделов среднего уха у взрослого контингента больных хроническим гнойным средним отитом. Результаты исследования свидетельствуют о том, что у 87% больных выявленные бактерии обладали высокой антибиотикорезистентностью. Консервативная терапия данного контингента больных проводилась комбинацией антибиотиков из 2-х групп как парентерально, так и местно, парентерально с антибиотиком из группы карбапенемов и фторхинолонов в качестве местной терапии.

Ключевые слова: *хронический гнойный средний отит, чувствительность к антибиотикам, фторхинолоны, карбапенемы.*

SURUNKALI YIRINGLI OTIT BILAN KASALLANGAN BEMORLARNING KLINIK-DIAGNOSTIK TUZILMASI

Esamuratov A.I.

Toshkent tibbiyot akademiyasi Urganch filiali

✓ Rezyume

Surunkali yiringli otitis media bilan og'rigan bemorlarning kattalar kontingentida o'rta quloqning turli qismlari mikrobiotalarini bakteriologik ekish natijalarini o'rgandik. Tadqiqot natijalari shuni ko'rsatadiki, bemorlarning 87 foizida aniqlangan bakteriyalar antibiotiklarga yuqori qarshilikka ega. Bemorlarning ushbu kontingentining konservativ terapiyasi 2 guruh antibiotiklari bilan parenteral va mahalliy, parenteral ravishda karbapenemlar guruhining antibiotiklari va mahalliy terapiya sifatida ftorxinolonlar bilan birgalikda amalga oshirildi.

Kalit so'zlar: *surunkali yiringli o'rta otit, antibiotiklarga sezuvchanlik, ftorxinolonlar, karbapenemlar.*

Relevance

Chronic inflammation of the middle ear, despite significant progress in prevention, diagnosis and treatment, remains one of the most common and dangerous childhood diseases. This is due to many

medical and social reasons, as well as such adverse effects as hearing loss and the risk of intracranial complications caused by exacerbations of a chronic process in the middle ear. The modern definition of chronic purulent otitis media (CPOM), summarizing the main features of this disease, was given by V.T. Palchun et al. [1]. CPOM is a chronic purulent inflammation of the middle ear, which occurs with persistent perforation of the tympanic membrane, persistent or recurrent suppuration from the ear, and hearing loss of varying degrees, gradually progressing with a long course of the disease [1, 2]. In addition, to date, CPOM is also dangerous as a source of formidable intracranial complications (mastoiditis, meningitis, brain abscess, sinus thrombosis). Changes in the etiological structure and sensitivity of CPOM pathogens in the last decade have had an impact on the nature of inflammation in the middle ear, its severity, and the duration of the course of the disease [5].

Objectives: to study the microbial landscape of various parts of the middle ear in patients with CPOM, to determine the sensitivity of the isolated bacterial flora to antibiotics of various groups, to conduct a comparative analysis of pathological changes detected during surgical intervention with the existing microflora in the middle ear cavities.

Materials and Methods

We examined 217 patients with chronic suppurative otitis media who were hospitalized in the ENT department of the TMA clinic, Urgench branch. In all patients, upon admission, a microbiological study of purulent discharge from the middle ear was performed, and the contents of the antrum and tympanic cavity were taken during sanitizing surgery on the ear. Microbiological methods included the study of the species composition of microflora from the ear on solid nutrient media; after species identification of the isolated microflora, its sensitivity to antibiotics of various groups was studied by diffusion into agar with standard indicator disks. To grow cultures of streptococci and *Haemophilus influenzae*, microaerophilic conditions were created using 10% CO₂. They also took smears for flora from the mucous membrane of the nasal cavity and nasopharynx to determine how its character changes after treatment. Treatment was carried out in accordance with the standards of specialized medical care: antibiotic therapy, catheterization of the auditory tubes (in case of preperforated otitis media), transtympanic injection of antibacterial drugs (in case of perforation of the tympanic membrane or after paracentesis), vascular therapy (in case of concomitant sensorineural hearing loss). In 20% of cases, shunting of the tympanic cavity was performed on one or both sides.

Result and discussion

With goal study etiological values microbial factor at CPOM in all patients was studied microflora cavities of the middle ear and determined its stability to antibiotics. quantitative and qualitative from becoming a microbial landscape were evaluated according to the growth rate of the colonies, polymorphism and the nature of the flora (Table 1). In formed clinical groups we took into account abundant and moderate growth, the predominance of one or two pathogens, mixed microflora with explicit advantage one microbe.

In patients with mesotympanitis, abundant growth of microflora on nutrients environments observed in 63.1% of samples, moderate — in 28.9%, no growth - in 7.8%. With abundant seeding, the overwhelming growth of one microbe was present in 28.9%, with moderate - in 4.6%, two or more microbes - in 9.2% and 17.1%, respectively, symbiosis with predominance one kind — in 25.0% And 7.2%.

Species identification showed among pathogenic microorganisms in crops dominated *S. aureus* and *Pseudomonas aeruginosa*, which you sowed at 27.6% And 10.5% the patient, respectively. except Togo were sown *S. epidermidis* (12.5%), *E. coli* (9.2%), *Corynebacterium* spp and *Enterococcus faecalis* (on 8.5%), *Str. pneumonia* And *Str. haemolyticus* (on 7.8%), *Str. viridans* (6.5%), *Str. sanguis* (5.2%), *S. saprophyticus*, molds and fungi of the genus *Candida* (3.9% each), *Str. mitis* (3.2%), *Str. salivarius* (1.9%). Figure 2 shows the seeding frequency depending on the comparison group

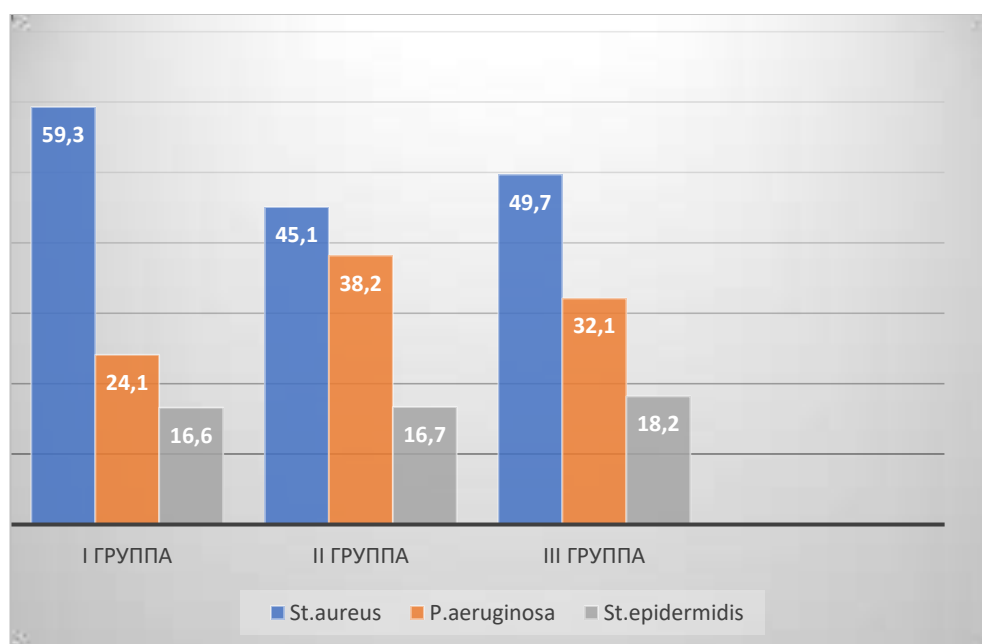
According to the results of microbiological studies, gram-positive cocci (*Staphylococcus aureus*, *Staph. spp.*, *St. epidermidis*), gram-negative non-fermenters (*Pseudomonas aeruginosa*) sticks; obligate anaerobic (*Peptostreptococcus* spp., *Fusobacterium* spp.) bacteria, yeast-like (*Candida* spp.) and molds (*Aspergillus* spp.) fungi, etc., more often in association (2–3 microorganisms). *St. epidermidis* in crops from the external auditory canal was evaluated as a representative of the normal biocenosis of the skin of the external auditory canal. Mixed flora was sometimes represented by associations of *Staphylococcus aureus* with gram-negative flora (11%), in 4% of cases yeast and mold fungi were present in microbial associations. In crops from the antrum and tympanic cavity, microbial pathogens were present in the test material in the monovariant: *Staphylococcus aureus* (55%), non-

fermenting bacillus (25%), *Proteus vulgaris* (10%), *Klebsiella pneumoniae* (5%). In patients with severe aditus block, the results of a study of the microbial flora of various parts of the middle ear in children with chronic suppurative otitis media are presented. These studies showed that in all patients with severe destructive changes in the middle ear, pathogens were highly resistant to antibacterial drugs. Treatment of such patients should be carried out using meropenem in combination with fluoroquinolones. locally. Thus, as a result of a bacteriological study, it was established that in the etiological structure of CGSO, the dominant microorganisms were gram-positive pyogenic cocci (*Staphylococcus aureus* and epidermal), non-fermenting rods (*Pseudomonas aeruginosa*), obligate anaerobic microorganisms were less common, among them peptostreptococci predominated. The representation of mixed microflora is shown in Figure 3

The nature of the microbial landscape of the middle ear depending on the severity of the inflammatory process

Microbiological characterization		I (n=97)	II group (n=79)	Group III (n=41)	t Student's criterion		
					1k2	1k3	2k3
contamination (all observations)	Abundant Growth	61 (63.4%)	34 (43.1%)	35.6 (86.9%)	2.02	2.07	3.61
		27 (27.8%)	17 (21.2%)	13.2 (32.2%)	1.14	0.2	0.91
		24 (24.6%)	13 (16.9%)	13 (31.9%)	1.44	0.6	1, 4 1
		8 (8.8%)	6 (7.1%)	11 (26.1%)	0.34	1.79	2.05
	Moderate growth	28 (28.8%)	26 (32.9%)	3 (7.3%)	0.32	2.89	2.92
		4 (4.1%)	9 (11.3%)	0	1.19		
		7 (7.2%)	12 (15.1%)	1 (2.4%)	1.62	1.76	2.73
		17 (17.5%)	14 (17.7%)	2 (4.8%)	1.79	1.69	0.02
No growth of microflora		8 (8.2%)	20 (25.3%)	2 (4.8%)	2.14	0.21	2.61
Cultured microorganisms							
<i>S. aureus</i>		29.1%	18.2%	43.1%	1.04	1.39	2.08
<i>Str. haemolyticus</i>		8.1%	16.4%	2.7%	0.56	2.18	2.34
<i>H. influenza</i>		6.2%	5.8%	14.5%	0.01	0.71	0.7
<i>S. epidermidis</i>		13.2%	12.5%	4.2%	0.03	0.81	0.68
<i>E. coli</i>		10.3%	8.1%	10.7%	0.18	0.21	0.6
<i>Ps. aeruginosa</i>		11.1%	22%	37.1%	1.04	2.11	1.3
<i>Str. mitis</i>		3.1%	0.8%	2.7%	0.2	0.3	0.21
Mushrooms		4.2%	5.8%	16.3%	0.3	1.5	1.2

Note: statistically significant differences in bold $p < 0.05$



Rice. 2 Frequency of inoculation of pathogens

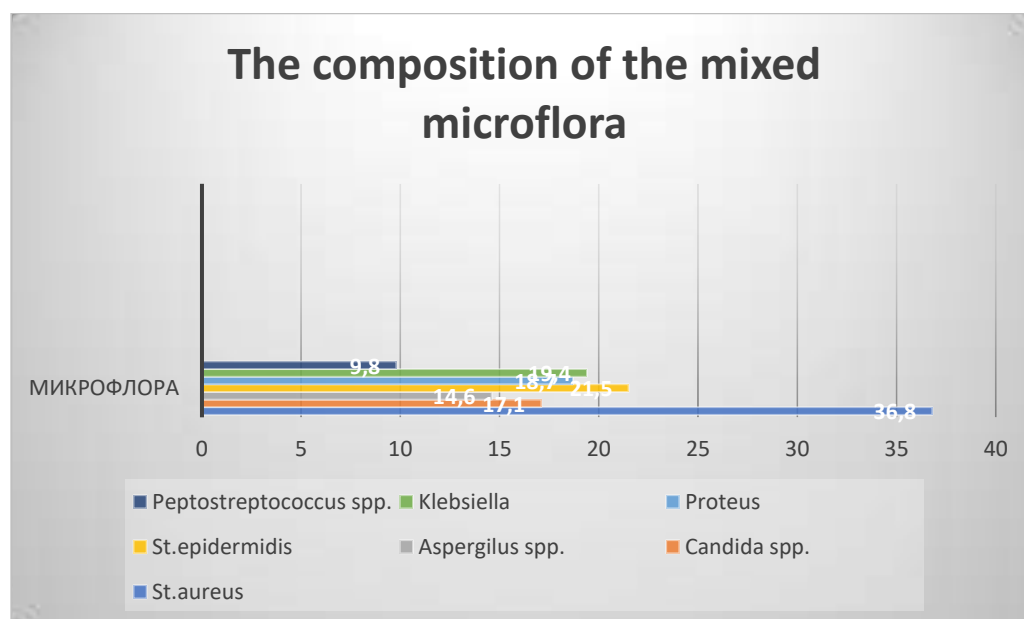


Fig.3 Composition of mixed microflora

In the study of the antibiotic sensitivity of the flora obtained during intraoperative sampling, resistance to most antibacterial agents was found. Of no small importance for the acquisition of resistance to a particular antibiotic by a bacterial population is its ability to form a biofilm - an organized community of microorganisms consolidated by a polymer matrix, the synthesis of which is induced by various circumstances, in particular, adhesion of bacterial cells to epithelial layers. According to the literature, *P. aeruginosa* is highly sensitive to fluoroquinolone drugs when administered parenterally. However, this does not provide a sufficient concentration of the drug in the focus of inflammation. In addition, *Pseudomonas aeruginosa* tends to infect patients with immune system defects. Along with microbiological examination, 40 patients with CPOM underwent audiological examination before and after surgery.

Conclusions

According to our data, multidrug-resistant strains of *S. aureus* and *Ps. aeruginosa*. The presence of fungal flora contributes to the maintenance of inflammatory processes in microbial associations and does not occur as a monoflora. The treatment of such patients, according to the study, should be carried out using antibiotics from the group of carbapenems in combination with fluoroquinolones. locally, as well as antimycotic drugs. Currently, the group of fluoroquinolones is a serious alternative to highly active antibiotics.

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