Detection of bacterial pathogens causing a chronic suppurative otitis media and study of antibiotic susceptibility in Iraqi patients

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antibiotic susceptibility,
Amikacin

**ABSTRACT**
A complete number of 100 ear swabs were researched for the present study. This investigation is to discover the microbiological profile and their antimicrobial susceptibility designs in patients with constant suppurative otitis media in an Al-hububi clinic. Gram recoloring, direct microscopy with KOH, culture affectability and biochemical tests were completed to distinguish the living beings and to realize the affectability design. Every one of the swabs were gathered from patients with the clinical conclusion of unending suppurative otitis media. Pseudomonas aeruginosa (37.21%) was generally secluded life form pursued by Staphylococcus aureus (27.91%) from the samples. Amikacin was found to be the most effective antibiotic with low resistance rate. The investigation of microbial example and their anti-infection affectability decides the predominant living beings causing unending suppurative otitis media in neighborhood begins fitting treatment of otitis media and its intricacies for effective result.

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INTRODUCTION
CSOM (The media of perpetual suppurative otitis) is an unending provocative procedure in the central space of that outcome in long haul or lasting variation of the film of eardrum including atelectasis, dimeric layer arrangement, puncturing, tympanosclerosis, withdrawal stash, or cholesteatoma, (Quinton 2010). There is a critical medical issue in our community. Inappropriate, and unseemly treating of CSOM may lead to a wide scope of complexities. The reason might be the spread of life which forms to structures adjoining the ear or to nearby harm in the central ear. These intricacies run along tireless otorrhoea, mastoiditis, labyrinthitis, facial nerve loss in the motion to increasingly genuine intracranial abscesses or thromboses (Healy and Rosbe, 2003). Microbial medication opposition is a developing worldwide issue. In a negative gram of microorganisms, most safe pathogens are E. coli; Klebsiella species; and Psudomonas aeruginosa, with expanding patterns watched in every real enemy of negative gram operators (beta-lactams, fluoroquinolones and aminoglycosides) (Rossolini et al., 2007). Genuine diseases brought about by positive gram of microbes which can be progressively hard to work due to causes of diseases, for example, methicillin-safe S. aureus (MRSA), and penicillin-safe S. pneumoniae (Menichetti, 2005). Recognition of different drugs safe separates can additionally confine remedial alternatives. In this manner, the culture of microbes and affectability may be a benefit in the proper administration of the media of otitis and its intricacies and along these lines keeping the development of safe bacterial strain. There is a need to comprehend the study of disease transmission and microbiology of CSOM so as to create successful techniques for essential coun-
teractive action and better administration of the ail-
ment (Ghonaim et al., 2011). The media of Otitis is a
polymicrobial multi-operator sickness infection that
may be assuming the main job in making ear dis-
eases which are adenovirus, flu infection and kinds
A; and B the two kinds, respiratory syncytial infec-
tion (RSV), enterovirus, rhinovirus; and coronavirus
additionally the infection of Para flu. The most
widely recognized infections which reason top res-
piratory contamination; and in the end starts a chain
which extends to the throat and ear disease within
convoluted states. It could be seen infections lead to
irritation of central ear and prompts intense otitis
externa. So in order to keep away viral contamina-
tions, diverse antibodies can be accessible in various
infections such immunizations might totally keep
from ear infections and different diseases brought
about by infections. Specific antiviral anti-toxins
may likewise be extremely certain to cure ear dis-
ease resulted from viral pathogens. For example,
cebosch, and so forth, salivation infection is avail-
able in typical bacterial greenery in oral depression,
and it is ended up being non-pathogenic yet,
in addition, keep from an assortment of pathogenic
life forms. It was likewise seen that salivation infec-
tion because of the development of BLIS could keep
the development of microscopic organisms identi-
ϑied with throat torment (Kubba et al., 2000).
Where infections can be a basic reason that may
cause otitis media microscopic organisms can be
additionally significant reasons incite ear contam-
ination. Most normal microorganisms associated
with otitis media are Pneumonia; Strepto; Catharlis
and Flu to make any disease microbes initially go
within-host body which requires colonization that is
dynamic procedure. (Tagg, 2004).
There was account for such Haemophilus flu make
synergism impact if Streptococcus pneumoniae addi-
tionally assault which equivalent single catching
flu infection kinds. These two kinds additionally obstruc
tual impacts at times. Distinctive special-
ists utilized against an assortment of disease fac-
tors as neomycin is just powerful against Staph-
lococcus aureus and Proteus kinds as it is rather
compelling against aeruginosa and anaerobes, so
polymyxin B utilized in opposition to certain kinds.
Beside the chloramphenicol can be considered as
strong against an assortment in life forms. Fluor-
roquinolones having ciprofloxac is normal anti-
infection to cure media of otitis.
Aminoglycosides, for example, gentamycin and
amikacin can be regularly utilized against nega-
tive gram of microscopic organisms by the objective
implementation of ears. (Burton et al., 2006).
Subsequently, amoxicillin anti-microbial is sufficient
against all gram-positive bacteria’s. Every now
and again, respiratory disease, infected throat or
pharyngitis may prompt ear contamination (Van-
denbroucke, 1982).
Parasites can likewise cause otitis externa. All things
considered, the ear ought to be perfect through, or
it very well may be wash by 1% acidic corrosive in
liquor endorsed by a specialist. An assortment of
anti-creams can be likewise utilizing to cure ear con-
tamination. Clotrimazole is adequate versus Can-
dida and Aspergillus types of parasites. Diseases
caused by parasites are, in all respects, strangely
happen (Ragland and Tagg, 1990).

MATERIALS AND METHODS
Source of Specimens
100 samples were collected from patients in Al-
Hububi hospital for both sexes and for all age groups
during the period from December 2017 to January
2018. This study was led in the lab of Nursing Col-
lege, University of Thi- Qar.
Preparing culture media
The media utilized within such examination was
set up as indicated by makes directions Oxoid, Ear
release was gathered utilizing steriled swab sticks
that were marked and handed to the research center
for bacteriological culture ponders. The swabs were
set on MacConkey agar, Blood agar and Chocolate
agar and hatched vigorously at 37 °C for 24 hours.
Identification of bacteria
Living beings are distinguished by standard micro-
Antibiotic susceptibility testing
Every single segregated strain were tried for weak-
ness to anti-infection agents on Mueller Hinton Agar
utilizing Kirby Bauer plate dissemination technique.
Results were translated utilizing Clinical Research
center Measures Foundation (CLSI) rules Bauer et al.
(1966).
RESULTS AND DISCUSSION
Gender distribution on patients
Chronic suppurative otitis media (CSOM) have been
improved the situation all the 100 patients. For both
sexes and for all age groups (Figure 1).
Bacterial isolates from otitis media
As per observational examinations and for both gen-
ders and all age gatherings, Pseudomonas aerugi-
nosa was the most well-known microscopic organ-
isms separated out of the bacterial culture (n=32; 37.21%) trailed by Staphylococcus aureus (n=22; 27.91%) and klebsiella (n=12; 13.95%) (Table 1) Pseudomonas aerogenosa is well-known reasons that is profoundly touchy (93%) to a great assortment of anti-microbials as appeared in Figure 2.

During the microbiological investigation of CSOM, different living beings are secluded. Of the 100 ear swabs refined, parasitic and microbes. This investigation Pseudomonas aeruginosa (37.21%) was observed as a widely recognized living being trailed by Staphylococcus aureus (27.91%) klebsiella (13.95%), proteus (10.46%), Escherichia coli (4.65%). Studies led by (Vishwanath et al., 2012) likewise presumed that pseudomonas aeruginosa was the most famous seclude pursued by staphylococcus aureus (Vishwanath et al., 2012). While the investigation of (Juyal et al., 2013) stated that staphylococcus aureus was the overwhelming life form in CSOM. This examination Amikacin was observed to be compelling versus all the bacteriological kinds disconnected. Like our examination discoveries, Amikacin was observed as best medication, in an investigation by Juyal et al. (2013). Different investigations additionally watched comparative examples of anti-infection affectability (Gulati, 1997).

In a planned report on the bacteriology of squamous sort of endless otitis media in intricacies, Pseudomonas and Proteus were the actual well-known life forms detached in patients with inconveniences. Information about the most widely recognized life forms causing constant otitis media with entanglements can keep the equivalent, and the antimicrobial affectability example should direct in suitable administration of CSOM and end the movement of complexity at a beginning time (Viswanatha et al., 2014).
Table 1: The microscopic organisms distinguished in the examples

<table>
<thead>
<tr>
<th>Bacteria Isolated from Swab Culture</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pseudomonas aeruginosaw</td>
<td>32</td>
<td>37.21%</td>
</tr>
<tr>
<td>Staphylococcus aureusw</td>
<td>24</td>
<td>27.91%</td>
</tr>
<tr>
<td>klebsiella pneumoniaew</td>
<td>12</td>
<td>13.95%</td>
</tr>
<tr>
<td>Proteus</td>
<td>9</td>
<td>10.46%</td>
</tr>
<tr>
<td>Esterichia coli</td>
<td>4</td>
<td>4.65%</td>
</tr>
<tr>
<td>Streptococcus pneumoniaew</td>
<td>3</td>
<td>3.49%</td>
</tr>
<tr>
<td>Streptococcus pyogensw</td>
<td>2</td>
<td>2.33%</td>
</tr>
<tr>
<td>Total</td>
<td>86</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 2: Antibiotic susceptibility test for the identified bacteria

<table>
<thead>
<tr>
<th>Antibiotic disc</th>
<th>Pseudomonas Sp (mm)</th>
<th>klebsiella Sp (mm)</th>
<th>Proteus Sp (mm)</th>
<th>E. coli (mm)</th>
<th>S. Aureus (mm)</th>
<th>Sensitivity percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gentamicin</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>100</td>
</tr>
<tr>
<td>Tetracyclin</td>
<td>6</td>
<td>-</td>
<td>6</td>
<td>-</td>
<td>-</td>
<td>40</td>
</tr>
<tr>
<td>Streptomycin</td>
<td>6</td>
<td>7</td>
<td>-</td>
<td>3</td>
<td>-</td>
<td>45</td>
</tr>
<tr>
<td>Ampicillin</td>
<td>7</td>
<td>8</td>
<td>5</td>
<td>8</td>
<td>8</td>
<td>80</td>
</tr>
<tr>
<td>Amoxicillin</td>
<td>7</td>
<td>-</td>
<td>5</td>
<td>5</td>
<td>-</td>
<td>30</td>
</tr>
<tr>
<td>Nitrofurantoin</td>
<td>6</td>
<td>-</td>
<td>5</td>
<td>5</td>
<td>-</td>
<td>30</td>
</tr>
<tr>
<td>Chloramphenicol</td>
<td>5</td>
<td>-</td>
<td>5</td>
<td>-</td>
<td>7</td>
<td>50</td>
</tr>
<tr>
<td>Septrin</td>
<td>7</td>
<td>-</td>
<td>-</td>
<td>5</td>
<td>-</td>
<td>25</td>
</tr>
<tr>
<td>Erythromycin</td>
<td>7</td>
<td>-</td>
<td>5</td>
<td>5</td>
<td>-</td>
<td>30</td>
</tr>
</tbody>
</table>

CONCLUSIONS

Pseudomonas kinds is the main culpable reason in CSOM and Amikacin can be observed as the best anti-toxin of less obstruction average. Creatures can be progressively getting to be impervious to normal and actual anti-infection agents like fluoroquinolones and penicillin assemble drugs. Henceforth, anti-toxin powerless tests should control the administration of CSOM.

REFERENCES


Ragland, N., Tagg, J. 1990. Applications of


