ACUTE OTITIS MEDIA BACTERIOLOGICAL STUDY AND DRUG SENSITIVITY PATTERN
Rakesh Kumar

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ABSTRACT: To study the clinical & bacteriological pattern of acute otitis media (AOM) in pediatric age group along with the antibiotic sensitivity pattern. This is to strengthen the choice of antimicrobial agent in treatment of AOM. The present study was carried out at ENT Dept. Netaji Subhash Chandra Bose Medical College & Hospital, Jabalpur from July 2004 to June 2005 and involved 100 outdoor patient of OM of which 46 pt were suffering from AOM. Aural swab was taken taking all aseptic precautions (like hand wash, sterile gloves, sterile aural swab stick) & prior cleaning of External Auditory canal (EAC) with saline & sprite. In the present study we have found streptococcus pneumonia & staph aureus as most common causative organism. Antibiotic sensitivity pattern of the isolated organism showed cephalosporin & Amikacin to be most effective. In conclusion, strepto pneumonia & strepto aureus are the most common causative pathogen. Most of pathogens have developed multidrug resistance cephalosporin’s are found most effective.

KEY WORDS: Acute otitis media streptococcus pneumonias, cephalosporin.

INTRODUCTION: Otitis media is defined as an inflammation of the middle ear cleft without reference etiology & pathogenesis [6]. The middle ear cleft consist of the tympanic cavity (tympanum) the Eustachian tube and the mastoid air cell system. Otitis media is one of the common illness in pediatric age group fiellau Nikolajsen (1979, 83). Zielhuis & van den Brock (1986). Though present in all age group on both sex it is more common in childhood (Ref 8, 12, 24). Santeria 1980 classified OM on the basis of duration as. Acute ≤ 3 week duration, sub acute 3 week – 3 month & chronic > 3 month. Third and fourth international symposia on OM define ear infection on clinical ground dividing them into four groups:

- Myringitis,
- SOM ċ effusion,
- Acute Suppurative otitis media (ASOM)
- Chronic Suppurative otitis media (CSOM)

Otitis media most commonly present with ear discharge hearing loss & cough -cold which is followed by earache, tinnitus and fullness of ear (Ref 10, 16, 21, 24). The term supportive OM means a purulent inflammation of the middle ear cleft. The cause is often purely infective Jordal 1949, Jannefer M et al, Rosenfeld RM, Post JC 1992 but other such as allergy (Kroemer M, Richardson MA, weiss NS, et al 1983, Blakely BW, Blakely JE 1995), Chemical irritants, Auto immune disease (Ammann A3, Shannon K 1985 pelton et al, Suzuki et al 1988) and other may underlie the discharge (Ref 10, 12, 15). It is necessary to establish as to whether it is viral or bacterial in nolure. Viral OM is usually a consequence of upper respiratory virus ie Rhino virus, Respiratory syncitial virus which present as congestion and middle ear fluid accumulation (Singleton 1956, freeman 1960, Bylander 1982 & fowler 1947).
Bacterial infection present with sigh and symptoms of acute inflammation, pain in ear, congestion and bulging of tympanic membrane, white, yellow or turbid fluid it may be associated with malaise and mild pyrexia (Fiellau Nikolajsen 1979, 83 Zielhuis and vanden brook (1986) Gehenna et al 1992 Bluestone Stephenson & martin 1992 Kenna MA 1993.)

Bacteriologically as well as etiologically both types are different. Due to prevalence of multiple pathogens and indiscriminate use of antibiotics the bacteriological scenario has changed. Vijaya D(2000), Parveen naheed (2000), Rao & Reddy (1991.)

**MATERIAL & METHOD:** The present study was carried out in a multi specialty Medical college & Hospital dept. of ENT Jabalpur from July 2004 to June 2005.

46 patient of Acute OM which were grouped often screening 100 pt’s of OM diagnosed on the basis of clinical examination.

External auditory canal of patient was cleaned with saline first followed by spirit to avoid contamination of culture material.

Taking all aseptic precautions like proper hand wash with aseptic solution wearing sterile gloves pus is taken from middle ear & sent for culture and sensitivity following all standard protocols throat swab blood test & urine test were all taken.

**RESULT & DISCUSSION:** Out of 46 pt’s of Acute OM, 8 patients were diagnosed as acute non-suppurative OM (80% Rt, 20% Lt) (Lalwani & Scoy 1992, Robbins Schneerson & Szu 1988, De Moria et al 1984) and rest 38 belonged to ASOM category (53% Rt, 21% Lt & 26% both) the 9-12 year age group was the more affection with more male patients than female. Vijaya D(62.77%m) 1998, Parveen Nahud (62.03%) 2002, Galati et all 1997 (61%m).

Ear discharge 95% Reduced hearing (50%) BN Reddy MS 1991 (100%) Gulati, Sudesh Kumar 1997 (65%). & cold & cough were the most common symptoms. Raol & Reddy 1991, Taneja MK 1998, Tharn bold 1958, Al Anozi et al 1998. The discharge character was mucopurulent in 31% pt and purulent in 21% pt. the volume of discharge was copiers in 59% and scanty in 29%. Perforation was central (small & medium) in 43% of patients. Harendranath 1982 (73.76%), Baruah et al 1972 (78.5%), laxmipati & Bhaskaran 1964 (84.1%). Throat infection with tonsillitis of Reddy Venugopal 1998 (25%) & 46% Adenoid varying grades was the major predisposing factor followed by DNS (45%) & URTI (44%) Pukander Sipila & Karma 1984, stinger up & Tos 1986. Streptococcus pneumonia was found in 31.8% followed by staph aureus in 27.27% E coli in 18.78% (Refr. 10, 23) & Aspergillus (fungus) was found in 4.5% cases. In 18.18% cases the discharge was found sterile as found by Arguedas A, Loaiza C 1998, Taneza M.K. 1998.


Staph aureus – Nwawolo CC Odusanya OO 200/

Antibiotic sensitivity pattern of the bacteria isolated from discharge showed cephalosporin, Amikacin, Norflox & Ciproflox to be the most effective antimicrobial agent. Nyembu DT, Tsheswaka JM 2003 & Alanazi et al 1998.

<table>
<thead>
<tr>
<th>Age(year)</th>
<th>Male%</th>
<th>Female%</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 3</td>
<td>6 - 10.5%</td>
<td>1 - 2.3%</td>
<td>7</td>
</tr>
<tr>
<td>3 - 6</td>
<td>7 - 12.3%</td>
<td>8 - 18.6%</td>
<td>15</td>
</tr>
<tr>
<td>6 - 9</td>
<td>10 - 17.5%</td>
<td>10 - 23.3%</td>
<td>20</td>
</tr>
<tr>
<td>9 - 12</td>
<td>26 - 45.6%</td>
<td>16 - 37.2%</td>
<td>42</td>
</tr>
<tr>
<td>12 - 14</td>
<td>8 - 14.0%</td>
<td>8 - 18.6%</td>
<td>16</td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
<td>43</td>
<td>100</td>
</tr>
</tbody>
</table>

Z = 0.60 ; P>0.05

Table I: Age & Sex distribution of the studied cores

<table>
<thead>
<tr>
<th>Drugs — Bacteria</th>
<th>Ampi</th>
<th>Genta</th>
<th>Clinda</th>
<th>Azi</th>
<th>Septran</th>
<th>Ciplox</th>
<th>Cephalosporin</th>
<th>Amikacin</th>
<th>Norflex</th>
<th>Amoxy</th>
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<tbody>
<tr>
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<td>13</td>
<td>10</td>
<td>14</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>16</td>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td>Staph A</td>
<td>14</td>
<td>25</td>
<td>28</td>
<td>29</td>
<td>26</td>
<td>28</td>
<td>34</td>
<td>32</td>
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<td>9</td>
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<tr>
<td>Pseudo</td>
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<td>10</td>
<td>8</td>
<td>11</td>
<td>5</td>
<td>14</td>
<td>18</td>
<td>17</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>Klebsiella</td>
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<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
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</tr>
<tr>
<td>Proteus</td>
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<td>1</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
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<tr>
<td>E Coli</td>
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<td>8</td>
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<td>15</td>
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<td>11</td>
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<td>55</td>
<td>69</td>
<td>83</td>
<td>84</td>
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<td>45</td>
</tr>
</tbody>
</table>

Table III: Bacteriology study of Aural swab & Antibiotic sensitivity pattern

Abbreviation:-

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