Consider acute otitis media (AOM) in the event of earache and otorrhoea; also with general symptoms (see History) in infants and toddlers, even if (indications for) earache or otorrhoea are absent.

### History

- Earache, otorrhoea, hearing loss, unilateral or bilateral presentation of these symptoms.
- General symptoms (fever, irritability, nocturnal restlessness, stomach ache, vomiting, diarrhoea, poor eating or drinking, drowsiness).
- Symptoms of an upper respiratory tract infection (cough, runny nose, sore throat).
- Severity, duration and course of the symptoms.
- Previous episodes of AOM in the past twelve months.
- Presence of grommets (tymanostomy tubes).
- Risk factors for complications (age < 6 months, anatomical abnormalities in the ENT field – for example Down’s syndrome or cleft palate – history of ear surgery, compromised immune system).

In consultation with the child’s carers, advice over the telephone can suffice for earache, but physical examination is essential in the case of:

- the child being severely or increasingly unwell;
- risk factors for complications;
- all other cases in which the general practitioner is considering antimicrobial treatment.

#### Contents of physical examination

Inspect both eardrums (remove cerumen or debris if necessary, but not with a syringe) and look for:

- aspect of the eardrum: colour, vascular injection, translucent or not;
- position of the eardrum: normal, bulging or withdrawn;
- otorrhoea, perforation of the eardrum, grommets.

In children who look unwell or who have risk factors for complications, look for indications of mastoiditis (bulging ear, mastoid painful to the touch) or meningitis (stiffness of the neck, reduced consciousness).

#### Evaluation

Make the diagnosis of acute otitis media in the case of earache and being unwell AND one of the following symptoms:

- red, bulging or non-translucent eardrum;
- eardrums with clear left-right difference in redness;
- otorrhoea, via an eardrum perforation or grommets, that has existed for a short period.

Vascular injection of the ear drums is non-specific for acute otitis media; it can also occur with a cold or with crying.

### THERAPEUTIC RECOMMENDATIONS

#### Education

- In children aged ≥ 2 years, the worst symptoms will have disappeared within 2 – 3 days in 80 % of the cases and follow-up is not necessary; the symptoms can persist for a longer period in younger children.
- Ear discharge will sometimes occur, but this usually resolves without treatment within 1 week.
- The child should not swim with his/her head under water in the case of an eardrum perforation; the child may shower.
- The child’s hearing in the affected ear will be poor during or after an acute middle ear infection, but this usually resolves spontaneously over the course of several weeks or months.
- Antibiotics have no significant effect on the duration and severity of the symptoms. Antibiotics can shorten the duration of pain or fever in the case of ear discharge that develops soon after the start of the middle ear infection and in the case of bilateral otitis media in children < 2 years of age.
**Drug treatment**

- Recommend analgesia in all cases; paracetamol is the first choice (see table for dosages).
- Instruct the child’s carers to contact the practice if the child’s condition deteriorates or does not improve.
- Antimicrobial treatment is indicated:
  - in the case of a child who is severely ill or who has deteriorated;
  - in the case of risk factors for complications;
- Consider antimicrobial treatment for children:
  - < 2 years old with bilateral AOM;
  - who already have otorrhoea during the first presentation of an episode of AOM;
  - if no improvement has occurred after three days.
- First choice is amoxicillin for 1 week; if there are contra-indications for amoxicillin, prescribe azithromycin for 3 days or co-trimoxazole for 5 – 7 days (see table for dosages).
- Instruct the child’s carers to contact the practice if the child’s condition has not improved within 48 hours after starting the treatment.

**Follow-up**

Follow-up is only indicated in the case of otorrhoea.
- After 1 week: start antimicrobial treatment if the otorrhoea persists (and if a watchful waiting policy was first selected).
- At 1 month after the otorrhoea has stopped: evaluate whether the eardrum perforation has healed.

**Consultation or referral**

- Refer the child to the ENT surgeon or paediatrician in the case of suspected mastoiditis or meningitis, respectively.
- Consult an ENT surgeon or refer in the event of:
  - lack of improvement 48 hours after starting an antimicrobial product;
  - persistent otorrhoea following a course of an antimicrobial product;
  - persistent eardrum perforation one month after the development of otorrhoea;
  - three or more recurrences in six months or four recurrences in a year.

### Paracetamol

<table>
<thead>
<tr>
<th>Age</th>
<th>Oral dosage</th>
<th>Rectal dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children aged 3 - 12 months</td>
<td>2.5 mL drink (24 mg/mL), 4 - 6 times daily</td>
<td>1 suppository of 120 mg, 2 - 3 times daily</td>
</tr>
<tr>
<td>Children aged 1 - 2 years</td>
<td>5 mL drink (24 mg/mL), 4 - 6 times daily</td>
<td>1 suppository of 240 mg, 2 - 3 times daily</td>
</tr>
<tr>
<td>Children aged 2 - 4 years</td>
<td>6 - 7 mL drink (24 mg/mL) or 1 tablet of 120 mg, 4 - 6 times daily</td>
<td>1 suppository of 240 mg, 3 times daily</td>
</tr>
<tr>
<td>Children aged 4 - 6 years</td>
<td>8 mL drink (24 mg/mL) or 1.5 tablets of 120 mg, 4 - 6 times daily</td>
<td>1 suppository of 240 mg, 4 times daily</td>
</tr>
<tr>
<td>Children aged 6 - 9 years</td>
<td>10 mL drink (24 mg/mL) or 0.5 tablets of 500 mg, 4 - 6 times daily</td>
<td>1 suppository of 500 mg, 2 - 3 times daily</td>
</tr>
<tr>
<td>Children aged 9 - 12 years</td>
<td>0.75 tablets of 500 mg, 4 - 6 times daily</td>
<td>1 suppository of 500 mg, 3 times daily</td>
</tr>
<tr>
<td>&gt; 12 years</td>
<td>1 tablet of 500 mg, 4 - 6 times daily</td>
<td>1 suppository of 1000 mg, 2 - 3 times daily</td>
</tr>
</tbody>
</table>

### Antimicrobial products

<table>
<thead>
<tr>
<th>Name, daily dosage</th>
<th>Preparation</th>
<th>0 – 1 years</th>
<th>1 – 2 years</th>
<th>2 – 3 years</th>
<th>3 – 5 years</th>
<th>5 – 7 years</th>
<th>7 – 9 years</th>
<th>≥ 9 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amoxicillin &lt; 9 years</td>
<td>100 mg/mL, 20 mL</td>
<td>0.6 mL 2 times a day to 1.5 mL 3 times a day</td>
<td>1 tablet 250 mg 1 times a day</td>
<td>1 tablet 2 times a day</td>
<td>1 tablet 2 times a day</td>
<td>1 tablet 2 times a day</td>
<td>1 tablet 2 times a day</td>
<td>1 tablet 2 times a day</td>
</tr>
<tr>
<td>≥ 9 years, adult dosage</td>
<td>50 mg/mL, 100 mL</td>
<td>3-4 mL 3 times a day</td>
<td>3-4 mL 3 times a day</td>
<td>4-6 mL 3 times a day</td>
<td>6-7 mL 3 times a day</td>
<td>1 tablet 2 times a day</td>
<td>1 tablet 2 times a day</td>
<td>1 tablet 2 times a day</td>
</tr>
<tr>
<td>Azithromycin 10 mg/kg</td>
<td>40 mg/mL, 15 mL</td>
<td>2-3 mL once a day</td>
<td>3-4 mL once a day</td>
<td>4-5 mL once a day</td>
<td>5-6 mL once a day</td>
<td>6-8 mL once a day</td>
<td>8-10 mL once a day</td>
<td>1 tablet once a day</td>
</tr>
<tr>
<td>Co-trimoxazole (not for &lt;6 months) 36 mg/kg</td>
<td>48 mg/mL, 100 mL</td>
<td>3-4 mL 2 times a day</td>
<td>4-5 mL 2 times a day</td>
<td>5-6 mL 2 times a day</td>
<td>6-7.5 mL 2 times a day</td>
<td>7.5-9 mL 2 times a day</td>
<td>1 tablet 2 times a day</td>
<td>1-1.5 tablet(s) 2 times a day</td>
</tr>
</tbody>
</table>