Otitis media (OM) accounts for the majority of cases of childhood hearing loss diagnosed by audiologists. Considerable confusion exists regarding the distinction between otitis media with effusion, also known as middle ear effusion or “glue ear”, and acute otitis media, the quintessential ear infection. Doctors fail to educate their patients properly about their benefits and risks of treatment options. Uncertainty remains among physicians regarding the comparative benefits and costs of the various treatment strategies, due to the lack of consensus on clinical and long-term functional outcomes of otitis media with effusion (Berkman et al., 2013).

**RESULTS**

**DEFINITIONS**

- **Acute otitis media (AOM):** The rapid onset of signs and symptoms of inflammation in the middle ear (Lieberthal et al., 2013) Hallmark symptoms: fever and otalgia.
- **Recurrent AOM:** 3 or more separate AOM episodes in the preceding 6 months or 4 or more episodes in the preceding 12 months with at least 1 episode in the past 6 months.
- **Otitis media with effusion (OME):** The collection of fluid in the middle ear; the signs and symptoms of acute inflammation or infection are absent (Perera et al., 2013). Does not represent an acute infectious process that benefits from antibiotics.
- **Prolonged effusion:** Effusion lasting 3 months or more.
- **Relationship between AOM and OME:** Effusion may become infected secondarily due to an ascending infection from Eustachian tube into the middle ear cleft. Conversely, 67% of patients develop a middle ear effusion after an episode of AOM (Waseem et al., 2014).

**PREVALENCE**

- **AOM:** Peak incidence between 6 and 24 months (Waseem et al., 2014)
- **OME:** Typically affects children between 3 and 7 years old (van Zon et al., 2012).
- **As of 2007, the annual prevalence of otitis media diagnoses in children younger than 18 was 247 per 1000 children** (National Center for Health Statistics, 2011). Highest rates of otitis media are represented by children aged 3 and younger (Klein et al., 2008).

**EVIDENCE-BASED TREATMENT**

- **Watchful Waiting (WW):** Most children improve eventually irrespective of management (Rosenfeld & Kay, 2003). American Academy of Pediatrics (Lieberthal et al., 2013) currently supports 48-72 hours of “watchful waiting” in which only pain medications are utilized. After this stage, the child is re-evaluated and only then prescribed antibiotics if symptoms appear to persist or worsen.
- **Medical and surgical treatment for AOM:**
  - **Antibiotics (Amoxicillin)**
  - **Tympanostomy tubes to minimize recurrent AOM**
- **Medical and surgical treatment for OME:**
  - **Myringotomy:** Incision is made into the tympanic membrane and all fluid is removed using suction.
  - **Tympanostomy tubes (TT):** A ventilation tube is placed at the incision site through the eardrum, to keep the middle ear aerated for a prolonged time and to prevent reaccumulation of fluid.
  - **Adenoidectomy:** Surgical removal of the adenoids, for children with recurrent OM previously treated with tympanostomy tubes, either alone or combined with tonsillectomy.
- **Alternative treatment options for otitis media:**
  - **Autoinflation:** Technique which opens and forces air through the eustachian tubes to minimize recurrent AOM.
  - **Otovent:** Otovent is a device used to open and force air through the eustachian tube by raising pressure in the nose, thereby equalizing the pressure in the middle ear and allowing better drainage of effusion.

**DISCUSSION**

- **61% of children have spontaneous symptomatic relief within 24 hours of diagnosis of AOM:** 80% by 2-3 days and 70% at 7-14 days. A relative increase of 30-50% in spontaneous resolution from OME is observed if watchful waiting period is extended from 3 to 6 months.
- **Compared to WW, TT is promptly effective in reducing effusion and improving hearing** (Berkman et al., 2013). The marginal benefit with respect to hearing thresholds is observed up to 6 months after tube placement.
- **Repeated antibiotic use can lead to decreased appetite, failure to thrive, and a longer term resistance even on a population level.**
- **Risks of anesthesia can be avoided.**
- **The prompt improvement in hearing offered by TT may not be absolutely necessary if the child is being closely monitored and developing well.**
- **The evidence regarding developmental delay specifically associated with untreated otitis media in the short term is highly uncertain and leaves room to believe that the long-term outcomes are similar regardless of the treatment course.**

In contrast to the traditional methods which only treat the symptoms of OME, autoinflation techniques target the underlying eustachian tube dysfunction in efforts of providing more lasting effects. By the adopting these practical techniques at home, the improvement noticed over the period of watchful waiting holds even greater potential.

**REFERENCES**


Klein et al. (2008). Otitis media with effusion: Epidemiology of otitis media, as well as its treatments.


