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Acute Otitis Media

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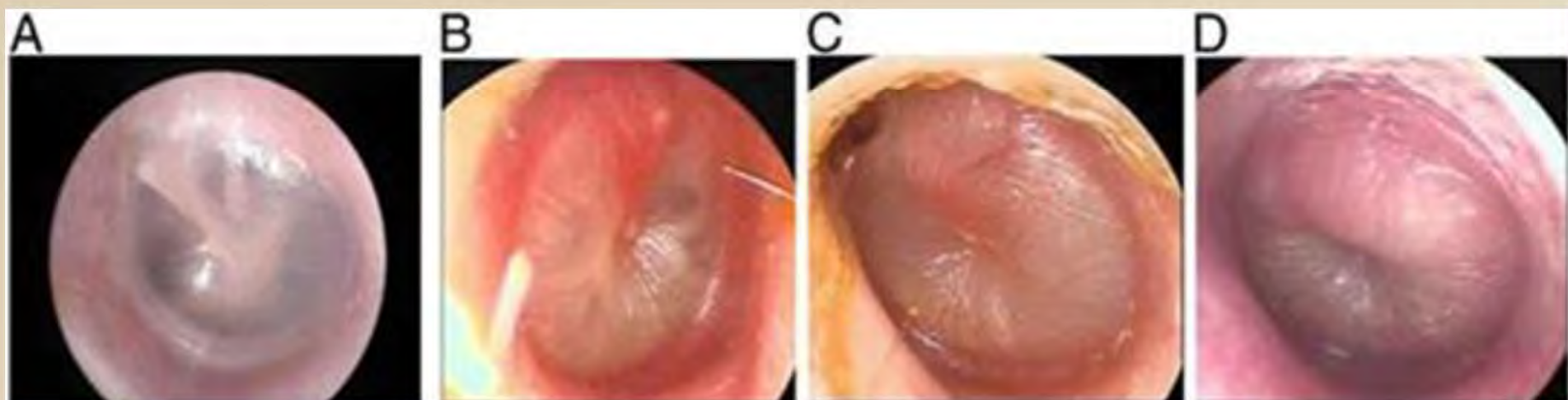
Acute Otitis Media in Pediatric Populations

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What is it?

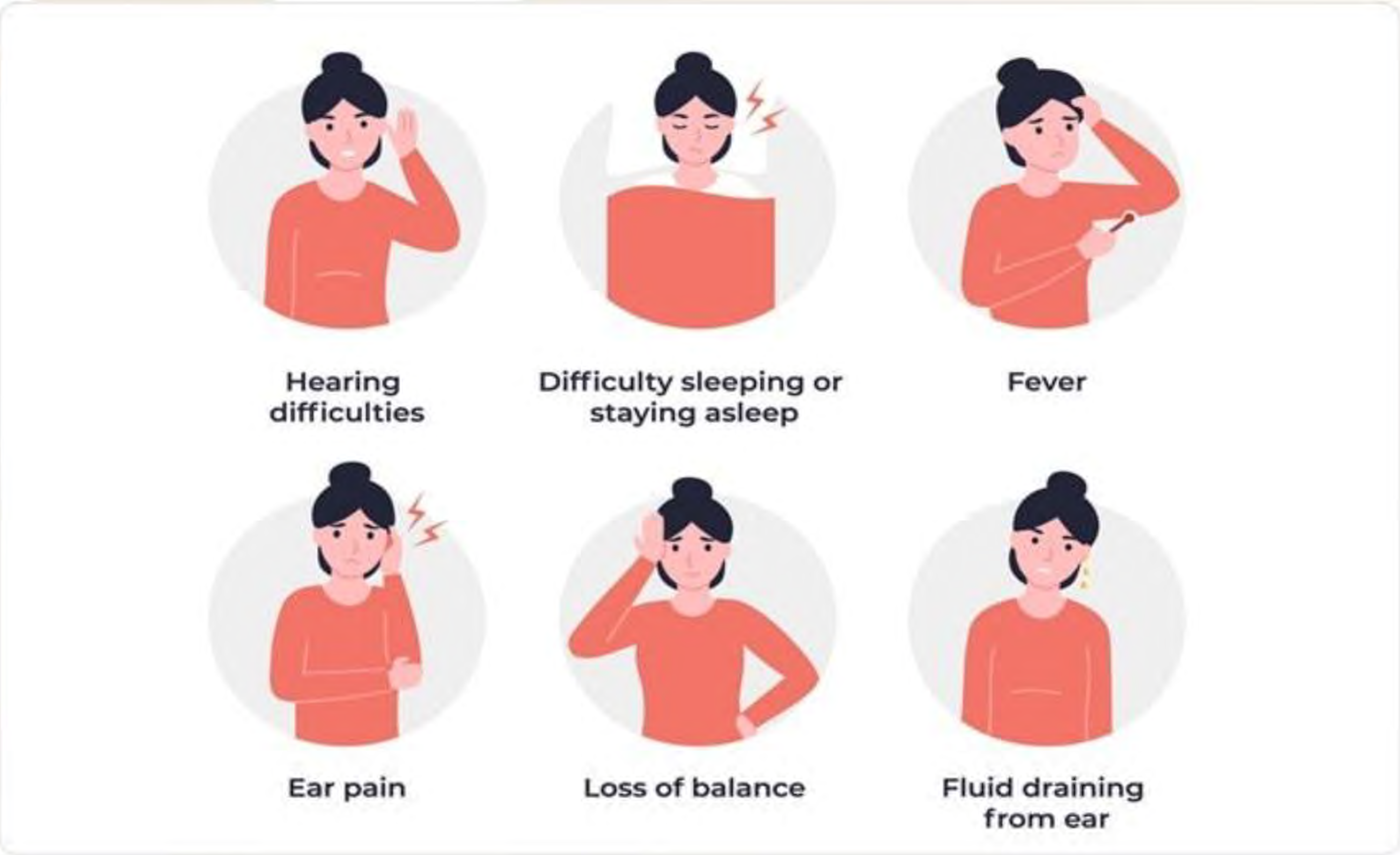
Otitis media begins as an inflammatory process that typically follows a viral upper respiratory tract infection that involves the mucosa of the nose, nasopharynx, middle ear, and Eustachian tubes. Due to the small anatomical space of the middle ear, the edema caused by inflammation blocks part of the Eustachian tube leading to an obstructed exit for exudate to move out of the ear. This causes a series of events resulting in an increase in negative pressure in the middle ear, increasing exudate from the inflamed mucosa, and buildup of mucosal secretions, which allows for the colonization of bacterial and viral organisms in the middle ear. (Danishyar & Ashurst, 2022)



Types of Otitis media

- **Acute otitis media**
 - This middle ear infection occurs abruptly causing swelling and redness. Fluid and mucus become trapped inside the ear, causing the child to have a fever and ear pain.
- **Otitis media with effusion**
 - Fluid and mucus continue to accumulate in the middle ear after an initial infection subsides. The child may experience a feeling of fullness in the ear and it may affect his or her hearing or may have no symptoms. Does not require antibiotics.
- **Chronic otitis media with effusion**
 - Fluid remains in the middle ear for a prolonged period or is recurrent, even though there is no infection. May result in difficulty fighting new infection and may affect the child's hearing. (Johns Hopkins Medicine, 2023)

What to look for



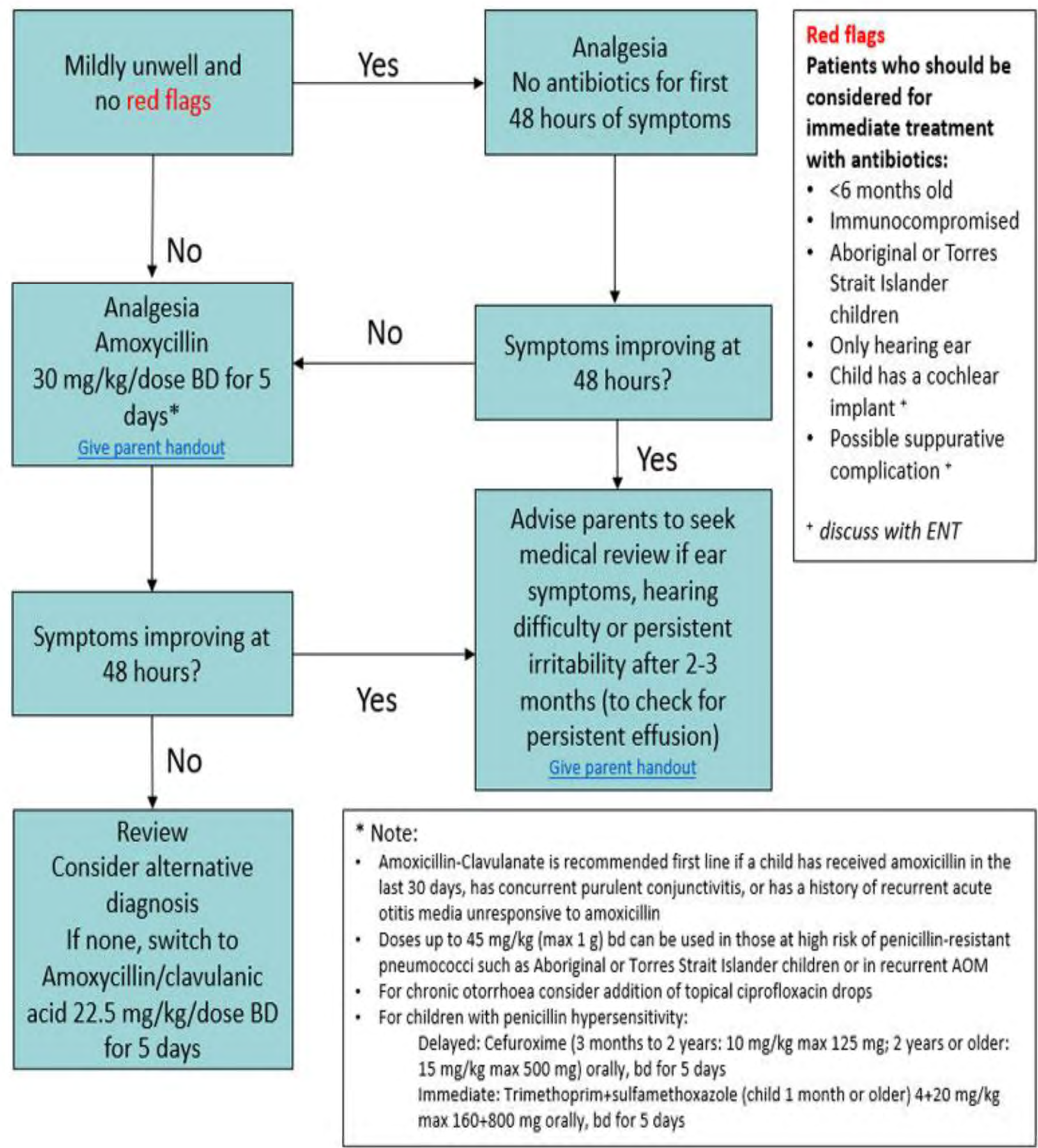
Why should We Worry?

- 709 million episodes of acute otitis media occur globally, half of which are in children less than 5 years of age
- By 3 years of age, at least 80% of children are expected to have had at least one episode of Acute Otitis Media
- AOM is the most common pediatric infectious disease and most common reason for medical visits, antibiotic prescriptions, and hearing impairment in children
- Estimated annual costs of AOM would be \$ 4.3 billion.
- 91.2% of AOM-related visits are Primary Care visits



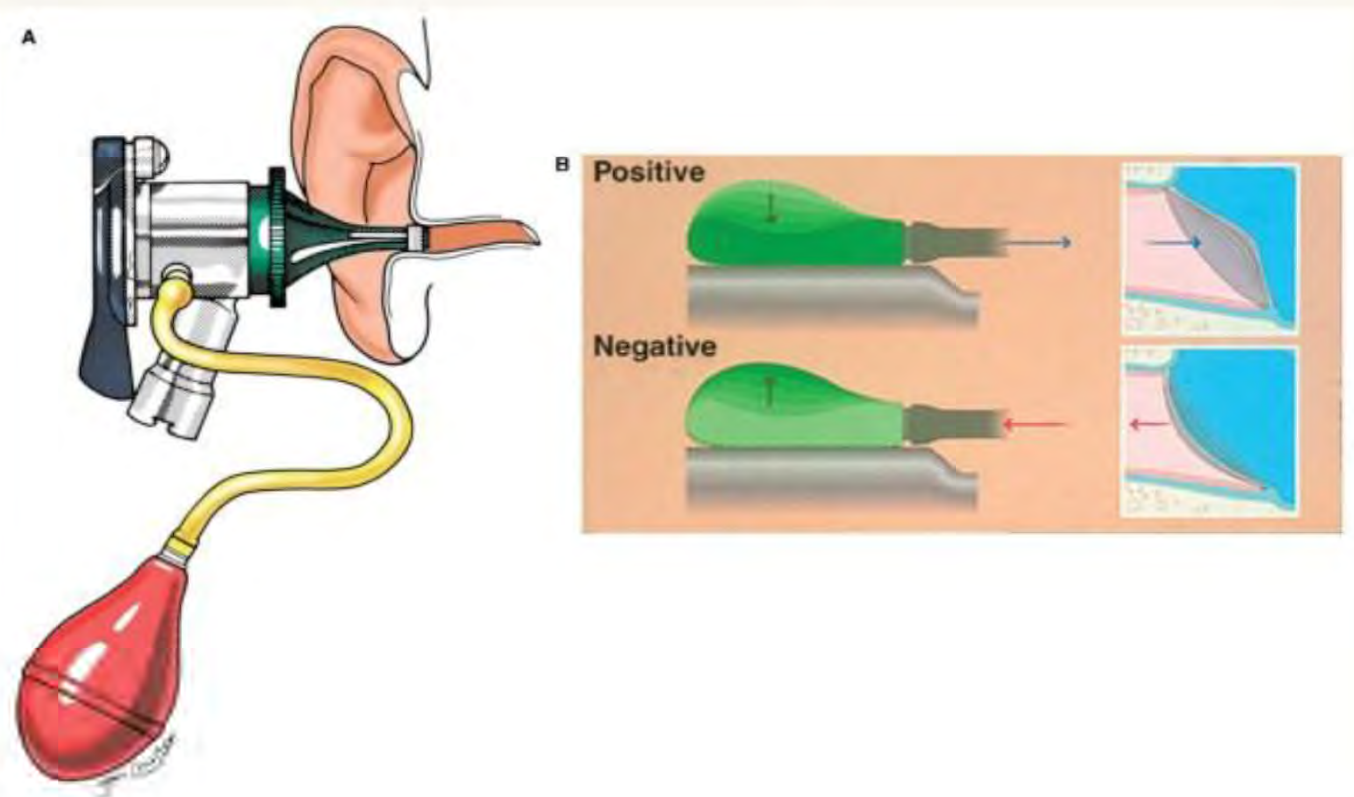
(Tong et al., 2018)

How to Treat



Useful Tools

- Pneumatic otoscopy
 - Device that can be used to determine the mobility of a patients tympanic membrane. Immobility of the TM is suggestive of effusion in the middle ear



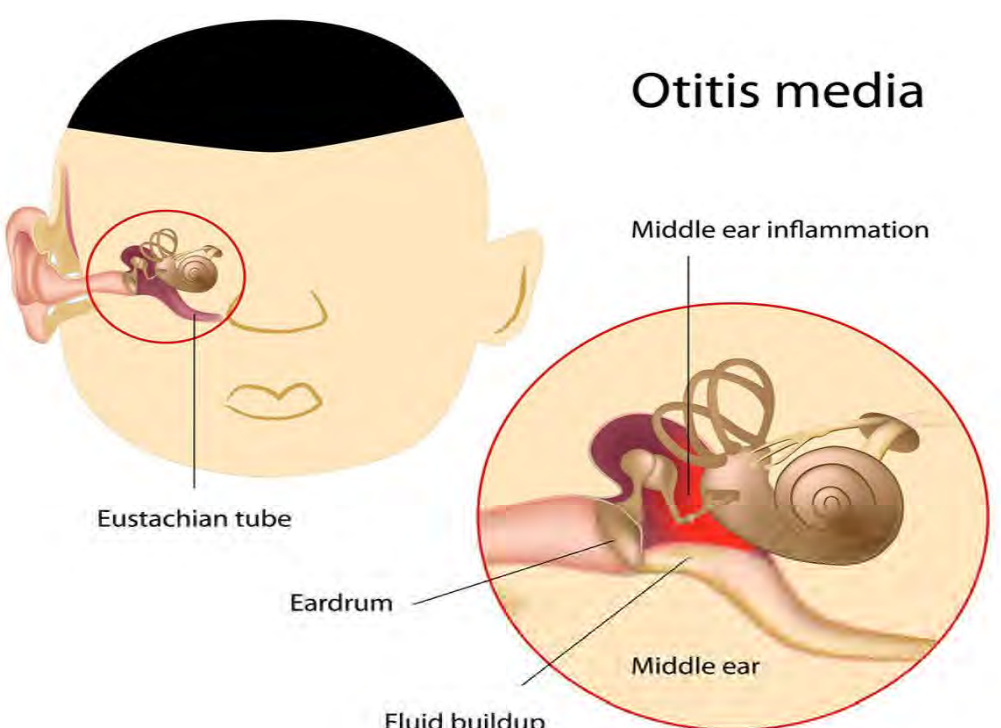
When to Refer

- 4 or more episodes in 12 months
 - Evidence of hearing loss
 - Failure to meet speech/language milestones
 - Effusion remains in ear longer than 3 months
- (Danishyar & Ashurst, 2022)



Key Takeaways

- Look for a bulging, red tympanic membrane accompanied by fever, ear pulling, irritability, or difficulty sleeping
- Immobility of the tympanic membrane with pneumatic otoscopy suggestive of effusion
- Effusion can last up to three months post-acute infection, effusion alone is NOT a cause for treatment
- First line treatment should be high-dose amoxicillin, unless penicillin allergy.
- Watch and wait method of treatment may be appropriate for children with uncomplicated AOM
- Refer to ENT if patient has four or more recurrent episodes in 12 months or evidence of hearing loss



References

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Danishyar A., Ashurst J.V.(2022) *Acute otitis media*. StatPearls. <https://www.ncbi.nlm.nih.gov/books/NBK470332/>

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Tong, S., Amand, C., Kieffer, A., & Kyaw, M. H. (2018). *Trends in healthcare utilization and costs associated with acute otitis media in the United States during 2008-2014*. National Library of Medicine. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5932897/>

Questions?

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