

Reprinted from:
4th European Congress of
**Oto-Rhino-Laryngology
Head and Neck Surgery**



Berlin (Germany), May 13-18, 2000

»Past – Present – Future«

Editors

KLAUS JAHNIKE • MARKUS FISCHER

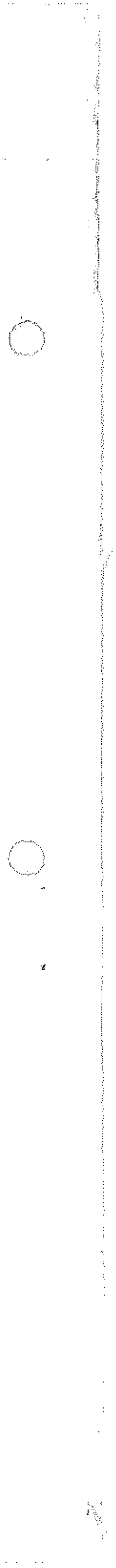


EUROS 2000



MONDUZZI EDITORE

INTERNATIONAL PROCEEDINGS DIVISION



Conclusion

In conclusion, the results of this study clearly demonstrate a significant role of OME in the development of childhood hearing impairment.

Furthermore, a direct correlation between OME and type B tympanogram suggests the importance of tympanometry in the diagnosis of OME in the children.

References

1. Roland PS, Finitzo T, Friel-Patti S, Brown KC, Stephens KT, Brown O, Coleman JM (1989). Otitis media. Incidence, duration, and hearing status. *Arch. Otolaryngol. Head Neck Surg.*, 115(9), 1049-1053.
2. Boswell JB, Nienhuys TG (1995). Onset of otitis media in the first eight weeks of life in aboriginal and non-aboriginal Australian infants. *Ann. Otol. Rhinol. Laryngol.*, 104(7), 542-549.
3. Lyn C, Jadusingh WA, Ashman H, Chen D, Abramson A, Soutar I (1998). Hearing screening in Jamaica: prevalence of otitis media with effusion. *Laryngoscope*, 108(2), 288-290.
4. Minja BM, Machemba A (1996). Prevalence of otitis media, hearing impairment and cerumen impaction among school children in rural and urban Dar es Salam, Tanzania. *Int. J. Pediatr. Otorhinolaryngol.*, 37(1), 29-34.
5. Maw R (1987). Otitis media with effusion (glue ear). In: Kerr AG (Ed.), *Scott-Brown's Otolaryngology*, Vol. 6, Butterworths, London, pp.159-176.
6. Suarez-Nieto C, Malluguiza CR, Barthe Garcia P (1983). Aetiological factors in chronic secretory otitis media in relation to age. *Clin. Otolaryngol.*, 8, 171-174.
7. Takasaka T (1990). Epidemiology of otitis media with effusion in Japan. *Ann. Otol. Rhinol. Laryngol.*, 99, 13-16.
8. Alho OP, Laara E, Oja H (1996). What is the natural history of recurrent acute otitis media in infancy? *J. Fam. Pract.*, 43(3), 258-264.
9. Tos M, Stangerup SE, Hvid G, Andreassen UK (1990). Point prevalence of secretory otitis at different ages. *Ann. Otol. Rhinol. Laryngol.*, 99, 14-16.
10. Kazanas SG, Maw AR (1994). Tympanometry, stapedius reflex and hearing impairment in children with otitis media with effusion. *Acta Otolaryngol.*, 114(4), 410-414.
11. El-Sayed Y, Zakzouk S (1995). Point prevalence of type B tympanogram in Riyadh. *Intern. J. Pediatr. Otorhinolaryngol.*, 31, 53-61.
12. Spremo S, Markic Z, Kurbalija (1998). Clinical importance of tympanometry in the diagnosis of chronic secretory otitis. *Spr. Arch. Celok. Lek.*, 126(7-8), 242-247.

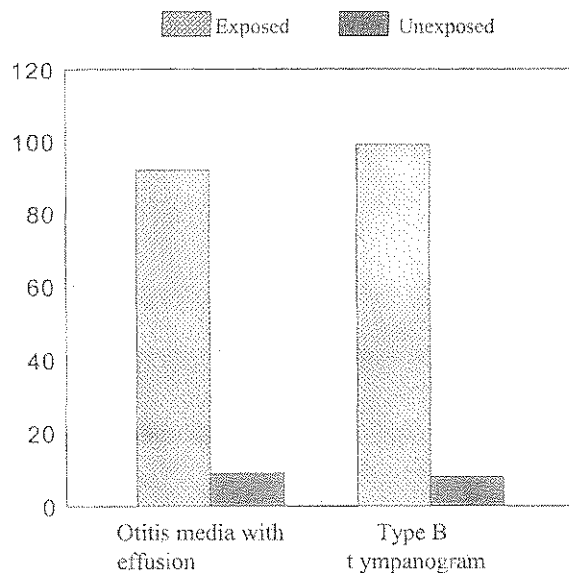


Fig. 3. Percent outcome of hearing impairment in the children exposed to otitis media with effusion or with type B tympanogram * $P < 0.001$ vs unexposed children

B tympanogram in the children from Southern province (Fig. 1C).

We used the data of prevalence of OME and type B tympanogram among the children of different sex, age group, provincial status, and consanguinity of parents to determine the correlation between the frequency of OME and type B tympanogram. The results showed a significant correlation ($r = 0.89$) between OME and type B tympanogram (Fig 2) suggesting that type B tympanogram could play an important role in the diagnosis of OME. Our findings are in agreement with earlier investigators who observed a close relationship between OME and type B tympanogram. It has been suggested that type B tympanogram may be used to screen younger children with OME (Kazanas & Maw 1994; El-Sayed & Zakzouk 1995).

We observed a significant association between OME (odds ratio = 157) and the development of hearing impairment (Fig 3). Our results also showed a significant association between type B tympanogram and hearing impairment (Fig. 3) suggesting that type B tympanogram is highly effective in detecting hearing impairment. These findings are in agreement with other investigators who suggested that type B tympanometry may be used to screen younger children with OME for hearing impairment, without the need for a pure tone audiogram (Kazanas & Maw 1994). Recently, Spremo et al (1998) also emphasized the clinical importance of tympanometry in the diagnosis of OME with a sensitivity of 96%.

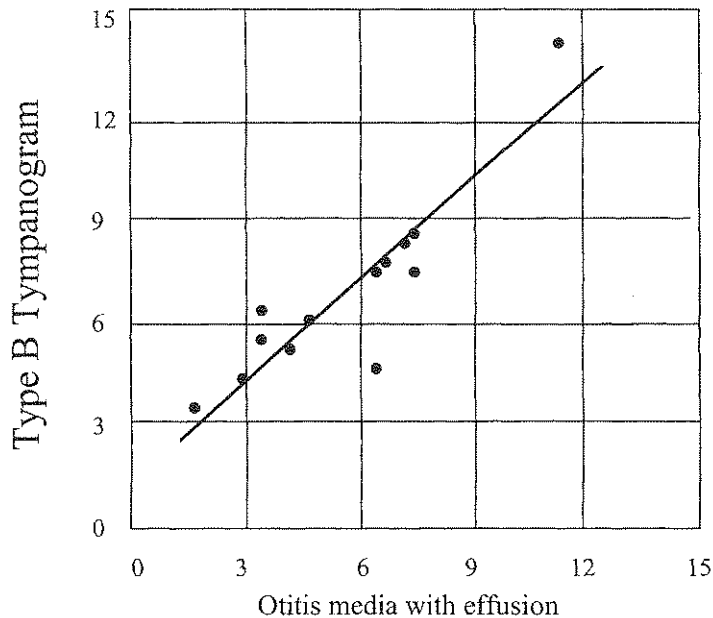


Fig. 2. Correlation between the prevalence of otitis media with effusion and type B tympanogram ($r=0.89$)

were hearing impaired. A total of 590 (98.33%) children out of 600 children with type B tympanogram were found to be hearing impaired whereas 651 (7.28%) children out of 8940 children without type B tympanogram were hearing impaired (Fig. 3).

Discussion

Our results showed higher prevalence of OME in male children (Fig. 1A). Earlier studies have also demonstrated high incidence of OME in males than in females (Maw 1987). The prevalence of OME and type B tympanogram was high in the children up to 8 years of age, thereafter it decreased with the increasing age (Fig. 1B). Several investigators have shown an inverse correlation between OME or type B tympanogram and age. Suarez-Nieto et al (1983) studied the prevalence of OME in 5414 Spanish children between 2 and 12 years of age and observed that the prevalence of OME decreased from 38.3% at 2 years to 1.1% at 11 years of age. A survey of 14509 children from Japan, aged 4 to 8 years showed the prevalence of type B tympanogram to be highest in the children at 4 years (19.3%) which decreased to 3.6% in 8 year old children (Takasaka 1990). Alho et al (1996) have suggested young age (less than 16 months) to be the most significant factor for predicting recurrent otitis media. One of the important findings of this study was high prevalence of OME and type

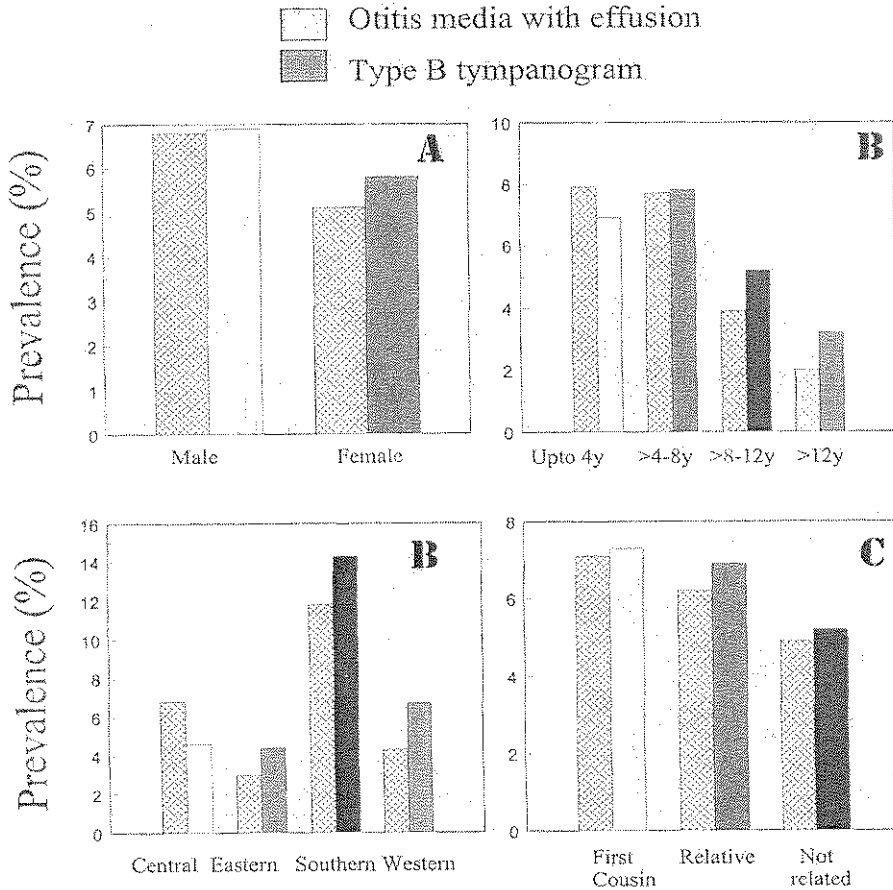


Fig. 1. Comparative view between the prevalence of otitis media with effusion and type B tympanogram in Saudi children of different (A) sex, (B) age group, (C) provinces, and (D) consanguinity of parents

higher (6.96%) than the children whose parents were relatives (6.32%), while it was least in the children whose parents were not related (4.7%, Fig. 4D). Similar effect of the consanguinity of parents was observed on the prevalence of type B tympanogram in the children (Fig. 4D). The prevalence of OME showed a significant correlation ($r = 0.89$) with the prevalence of type B tympanogram (fig 2).

The overall prevalence of hearing impairment was found to be 13%. The children exposed to OME or with type B tympanogram showed significantly high rate of hearing impairment (Fig. 3). There were 549 children exposed to OME, 509 (92.71%) of them were found to be hearing impaired, whereas only 732 (8.14%) children out of 8991 unexposed children